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# USSR Report

AGRICULTURE

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27 August 1984

## USSR REPORT AGRICULTURE

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### COTTON-GROWING TECHNOLOGY OFFSETS UZSSR BAD WEATHER

Moscow PRAVDA in Russian 28 May 84 p 1

[Article by PRAVDA correspondent Yu. Mukimov: "Cotton Gaining Vigor"]

[Text] Harvest-84: Making Use of Sowing Trends

On the wide open fields which stretch from the rugged slopes of the Western Tyan'-Shans to the shores of the Aral Sea, the cotton grows lush and green. A cold spring has brought more than a little concern for the farmers here. Spring planting had to put off for an unusually long time. But, on many of the farms--those which had made intelligent use of nature's gift of water reserves--the seedlings emerged earlier than usual.

The Golodnaya Steppe. Right in its center lies the best cropland of the sovkhos imeni the newspaper PRAVDA. During the winter, it was covered with snow--a rare occurrence for this locale. In order to conserve the moisture, ridges were built up in the fields--effective snow barriers. In the spring, the water seeped into the deeper soil horizons, washing out the salt and improving soil texture and content.

"The resourcefulness of the cotton growers made it possible to carry out planting without additional irrigation," explained the director of sovkhos, Abdurazzak Kayumov. "The soil was not worked a single time prior to the sowing of seed. And, as you can see, the young plants are thriving. We plan to nurture and develop every plant to full maturity. The field equipment is operating around the clock. When sowing was completed, we immediately began cultivation. The plan is simple: make maximum use of every hour to raise and harvest 15,500 tons of cotton--620 tons more than last season."

If abundant moisture is welcome in the steppe zone, it can be troublesome on marshlands. The work brigade under the direction of Abduvali Rasulmatov from the kolkhoz imeni Votintsev in Akurganskiy Rayon of Tashkent Oblast works only the fields along the banks of the Syr-dar'ya River on boggy meadow soils. Walking over them, the water splashes underfoot. By spring, everything here was soaked by the heavy precipitation. Until the start of field work, the cotton farmers put all of their efforts into cleaning up the irrigation and land improvement network. Deeply buried collectors, working like pumps, absorbed the

surplus ground water and discharges it beyond the fields into the river. Along with it goes the salt. Cotton flourishes on 1350 hectares on this farm. Each hectare is expected to yield 40 quintals of raw cotton.

Newer, more progressive methods for cultivating cotton are now being employed a large scale. The usual planting practice is to use seed from which the flocs have not been cleaned--subsequent seedling emergence is not uniform: excellent in some spots, poor in others. Cotton growers are now eschewing the old method and switching to the use of naked seed. What is the advantage? It is precision and uniformity in sowing standards. This provides for simultaneous emergence of seedlings. The end result is lower seed expenditures. Also, the need to thin plants is obviated. Growers in Tashkent Oblast are enthusiastically applying the new technology. They are already convinced of its advantages.

"This spring, 70,000 hectares were sown with naked seed," we are told by M. Kadyrov, secretary of the Tashkent party obkom. "This much is certain: the increase in the harvest will be considerable, what is more, cotton growing costs will be effectively reduced. It has been sown over more than 120,000 hectares using wide-row spacing. This will permit productive utilization of machinery in the fields, transferring to it the entire burden of field operations--from sowing to harvest."

A good start requires quick wings. For this growing season, wide-row plantings occupy about 55 percent of all cropland in the republic, while precise sowing of naked seed was employed on half of the fields.

This spring is distinguished from past springs by the effort to improve the quality of the cotton crop. As everyone knows, this begins with the seed. For this reason, the amount of cropland set aside for the growing of fine-fiber varieties is significantly greater than last year. Plantings of medium-fiber varieties have also been expanded. They have been sown over more than 267,000 hectares this year, compared to 100,000 hectares in 1983, and only 16,900 in 1980.

From the first days of spring, strong winds have been blowing over the fields. They have severely dried the soil on many farms of Tashkent, Andizhan, Namangan, Navoi and Surkhan-Darya oblasts. In order to prevent withering of the seed, cotton growers conducted extensive supplemental irrigation. Hundreds of thousands of hectares were watered during an 8-10-day period. All of this served to instill additional vigor in the seedlings.

The majority of kolkhozes and sovkhoses--losing no time--have begun cultivating operations, while at the same time adding a top dressing of fertilizer to the crop. At the present time, 22,000 cultivating units are at work in the fields of the republic.

In some places, however, there were failures to take into account the special problems arising in spring. For some reason, in a number of oblasts and rayons it was thought that conditions this year would be generally favorable, that there would be adequate soil moisture, seedling emergence would be uniform, and that things would, as they say, pretty much take care of themselves. Meanwhile, some alarming signs began to appear: on certain farms in Kashka-Darya, Dzhezak, Bukhara,

Syr-Darya and Fergana oblasts, the cotton crop could not, by any stretch of the imagination, be considered up to proper levels. The plants were thinned out, and, on saline soils, where groundwater deposits were nearby, seedling emergence was much poorer than expected. It is still not too late; additional sowings should be made.

The workday of Uzbek farmers has been squeezed to the limit: right now the foundation is being laid for the coming harvest. For that very reason, every hour is dear.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BRIEFS

LATE KRASNOYARSK KRAY SPRING--Krasnoyarsk--Following a protracted delay of nearly 3 weeks, spring has arrived in the Yenisey River valley. The farmers of the Shushenskiy, Minusinskiy, Krasnoturanskiy, Uzhurskiy, Nazarovskiy and other rayons availed themselves of days of good weather. They actively commenced harrowing and stubble-breaking. These field operations are to be conducted over an area of 3.6 million hectares, along with pre-sowing work on 2.2 million hectares, within the shortest possible time. [Text] [By P. Zinkev] [Moscow SEL'SKAYA ZHIZN' in Russian 8 May 84 p 1] 1386

LATE ALTAY KRAY SPRING--Barnaul--The protracted cold spring prompted major adjustments in the work of Altay Kray farmers. On the other hand, the late snowfalls offset the soil moisture deficit. The principal concern of the kray's mechanizers is to prevent and cover all sources of the evaporation of that moisture. As always, the steppe rayon toilers energetically launched the work to prepare the fields for sowing. On these fields, hundreds of harrow sets are operated to cover the moisture in the soil. In Kulundinskiy Rayon the first to complete this important agrotechnical operation were the farmers of Semenovskiy Sovkhoz. In 5 work days they harrowed the sovkhoz's entire plowland. The front of field operations in Altay is growing broader with each day. Moisture is being covered on the fields of all the rayons. [Text] [By A. Torichko, SEL'SKAYA ZHIZN' correspondent] [Moscow SEL'SKAYA ZHIZN', 9 May 84 p 1] 1386

GOOD TOMSK OBLAST WEATHER--Tomsk (by telephone)--The weather in early May has favorably altered the situation on the oblast's fields. Snow is melting everywhere. To farmers this is a season of exertions. At the Sovkhoz imeni 50-letiy SSSR, Tomskiy Rayon, the first to commence field operations were the mechanizers of the brigade of G. K. Dudnichenko. They face the task of applying mineral fertilizers to about 2,000 hectares of perennial grasses. All work is done under the collective contract system. The mechanizers intend to conduct the harrowing operations one after the other and to complete the sowing of grains within 5 days. Their aim is to grow 20 quintals of grain and 250 quintals of green bulk corn per hectare. More recently, the mechanizers of the Kozhevnikovskiy, Shegarskiy, Asinovskiy and Krivosheinskiy rayons also started field operations. [Text] [By A. Solov'yev] [Moscow SEL'SKAYA ZHIZN' in Russian 9 May 84 p 1] 1386



TOMSK OBLAST GRAIN SOWING--Tomsk--Mass sowing of grain has commenced on the sub-taiga fields of Tomsk Oblast, which represents the northernmost farming zone in Siberia. The mechanizers opposed the capricious spring with a complete array of agrotechnical operations--double-to-quadruple harrowing of soil, sown-soil packing and the local application of fertilizers. Working under the brigade collective-contract system, 250 sowing links applied for the first time to the entire sowing area more than a million tons of organo-mineral composts whose production from local peat was mastered by the Barabinskaya Peat-Compost Factory, the first of its kind in the Ob' River Valley. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 9 May 84 p 1] 1386

OMSK OBLAST FERTILIZERS APPLIED--Omsk--Winter rye is grown on 100,000 hectares in the oblast's sovkhozes and kolkhozes. All sowings germinated well during the spring vegetation season. Farmers strive to provide the crop on schedule with nitrogenous and other fertilizers. The first stage of the application of fertilizers to rye and perennial grasses is already over. They were applied "on the skull," so to speak, that is, onto unfrozen soil. Now fertilizers are being applied by the soil-notching method with the aid of disk drills as well as by spreading with the aid of RUM/Mineral fertilizer spreaders/ machines with subsequent harrowing. [Text] [By M.Sil'vanovich, SEL'SKAYA ZHIZN' correspondent] [Moscow SEL'SKAYA ZHIZN' in Russian 12 May 84 p 1] 1386

LATE SPRING IN SIBERIA--Novosibirsk--Spring has been very late in Siberia, but nevertheless the pace of field work is quickening with each day. Early harrowing of fallows and plowland is under way everywhere. In the Kulunda Zone many farms have already completed the first harrowing and, following the recent rains, commenced the second moisture-retention operation. This work is being carried out well in Karasukskiy Rayon, where more than 100,000 hectares have been thus cultivated. The mechanizers of the Ordynskiy, Kochenevskiy, Cherepanovskiy and other rayons are working on the fields in a well-organized manner. [Text] [By P. Chernov, SEL'SKAYA ZHIZN' correspondent] [Moscow SEL'SKAYA ZHIZN' in Russian 18 May 84 p 3] 1386

KURGAN OBLAST GRAIN SOWING--KURGAN (by telephone)--The Transurals are lands of wheat, of grain. The kolkhozes and sovkhozes there cultivate more than 3 million hectares of arable land. Mass sowing of grain crops, chiefly of spring wheat, is being conducted between 15 and 25 May in accordance with the farming system developed by Twice Hero of Socialist labor T. S. Mal'tsev, field crop grower at the Zaveta Lenina Kolkhoz in Shadrinskii Rayon. These days more than 30,000 of the oblast's mechanizers started field work. Special attention is being devoted to the quality of the work and to the retention and thrifty use of soil moisture. [Text] [By I. Shevchenko] [Moscow SEL'SKAYA ZHIZN' in Russian 25 May 84 p 1] 1386

ALTAY KRAY SPRING SOWING--Barnaul--Sunny weather has arrived in the Altay. It is being utilized by the mechanizers of the eastern and piedmont rayons, where the soil "matures" earlier than in the steppe Kulunda. Farmers on many of the kray's farms have commenced the mass sowing of early grain and pulse crops. Given the Siberian weather, the number of days suitable for field work is limited. That is why the mechanizers resolved to carry out spring sowing

within 100 hours. The rapid pace of the sowing drive is promoted by the large-scale use of equipment, pre-planned routing of machinery and attachments and the coordinated performance of mechanized brigades and links. [Excerpts/ Moscow SOVETSKAYA ROSSIYA in Russian 11 May 84 p 1] 1386

CAPRICIOUS NOVOSIBIRSK OBLAST WEATHER--Novosibirsk--/OLD INHABITANTS SAY THAT IN 25 YEARS THEY HAVE NOT SEEN THE LIKE OF SUCH A PROTRACTED AND AT THE SAME TIME CAPRICIOUS SPRING WEATHER IN NOVOSIBIRSK. AND INDEED, "THE DAWN OF THE YEAR" AT PRESENT IS OFF ITS BEATEN SEASONAL TRACK. [printed in boldface] It all began without any special signs. The first day of spring, 1 March, was up to its perennial reputation. The abundant sunshine and near-zero temperature stirred up sparrows and titmice. But within less than a week afterward the winter again blew its harsh breath. However, the Ob', apparently seized by the same mood as the sparrows, threw off its ice armor on the segment flowing across the city during the first 10 days of March--1.5 to 2 weeks earlier than customary. But the advent of April was announced with a new frost and gusty northerlies....March drizzle, February blizzards and the icy cold of January played leap-frog. The feelings of meteorologists in such a situation could be readily imagined. Nonetheless, their forecast of higher temperatures in the second 10 days of April (to reach as much as 13-18 Centigrade degrees on some days) proved correct. On 19 April the weather did warm considerably indeed and on the 22nd the thermometer when exposed to the sun showed 23 Centigrade degrees. That was when the floods began! The headquarters of the oblast flood commission took the necessary steps in good time. In particular, ice was loosened by blasting on the river sectors in front of bridges and other manmade structures. These preparations averted many disasters. Even so, the self-willed spring brought surprises. A brigade of blasting workers had to make an urgent flight to Suzunskiy Rayon, because thick ice hummocks formed on the Karakan River near the settlement of Mayurovo. The same thing could happen on the Berd' and Inya rivers, so that continual alertness is necessary. Within the boundaries of the city of Novosibirsk so far the high-water has not caused serious damage, discounting the complications that arose on Stantsionnaya Street where the absence of rain gutters hinders traffic even in normal spring. It was there, precisely on a "Red Saturday," that the abundant high-water halted trolleybus traffic for an entire day. And, as if feeling that man is stronger, the elements were becalmed. On Monday 23 April cold weather again returned (but will it last long?), accompanied by hail and a mixture of snow and rain. [Text] [By Yu. Voronchikhin] [Moscow TRUD 27 Apr 84 p 4] [1386]

NOVOSIBIRSK OBLAST WHEAT SOWN--Novosibirsk--As of this spring, more than 50 kolkhozes and sovkhoses in the oblast specialize in growing strong and high-grade wheats. More than a million hectares of land has been allocated for growing these crops, chiefly in the Kulunda Steppe. The continuous-flow system of field operations, introduced with the aid of scientists from the Siberian Affiliate of the VASKhNIL [All-Union Academy of Agricultural Sciences imeni Lenin], has served to shorten to 2-3 hours the intervals between the operations and expedite the sowing. [Text] [Moscow TRUD in Russian 27 May 84 p 1] [1386]

OMSK OBLAST SMUT CONTROL--A number of measures to combat smut diseases was taken in Omsk Oblast as early as last year upon analyzing the decisions of the

Collegium of the RSFSR Ministry of Agriculture. The oblast administration of agriculture issued the order "On Tighter Monitoring of the Quality of Seed Treatment." At one of its sessions the headquarters for the conduct of spring field work considered the problem of preparing seeds for sowing and expressed a number of critical comments that were taken into consideration when carrying out the treatment of seeds. A total of 470 seed disinfection areas manned by 479 links--about 2,000 persons who underwent a special training course--was prepared. The seeds were treated with the aid of PS-10 and M6bitoks as well as of RS-100 and F-21 machines and also on 98 continuous-flow lines adapted to the treatment of seeds with non-mercury disinfectants. Despite the unfavorable weather in the spring of 1983 (minus temperatures reigned nearly throughout April), 27 percent of the seeds was treated ahead of schedule. Their treatment was conducted only in the presence of moisture or upon using suspensions. This work was well-organized in the Mar'yanovskiy, Moskalenskiy, Pavlogradskiy and Omskiy rayons (chief crop-protection agronomists: A. F. Yurchenko, N. D. Sergeyeva, N. P. Sotnikova, T. K. Glushko), in which the quality of the treatment was found to be high. At the same time, in certain other rayons violations of the technology were tolerated: laboratory tests established below-norm use of disinfectants in 43 percent of the specimens tested. Currently the preparations for treating the seeds for the 1984 harvest are nearing completion. The disinfectants and protective clothing and gear have been provided and medical examinations are under way. Seed disinfection schedules have been drafted and distributed to the kolkhozes and sovkhozes and plans exist to treat 50,000 tons of sowing material by April. As in the previous years, humidification and adhesion-promoting additives will be employed. On all farms disinfecting equipment is being repaired and agrochemical study circles have begun to pay considerable attention to enhancing the effectiveness of chemical crop protection as well as of safety engineering as applied to the handling of pesticides. [Excerpt/Py G. Anyutin, Chief Agronomist of the Omsk Crop Protection Station] [COPYRIGHT: Izdatel'stvo "Kolos", "Zashchita rasteniy", 1984/ 1386

SOWING IN TOMSK OBLAST--Tomsk (by telephone)--The farmers of Tomsk Oblast are completing the sowing of spiculate crops and commencing the sowing of corn and other fodder crops. The field work, organized in two shifts, halts neither day nor night. Most of the oblast's mechanizers work under the brigade collective-contract system. The sowing of grain crops has been completed on many farms in the Kozhevnikovskiy, Tomskiy, Molchanovskiy, Shegarskiy and other rayons. Completing the sowing, the mechanizers are, upon the initiative of the collectives of Asinovskiy Rayon, preparing themselves thoroughly for hay mowing--adjusting the fodder-preparing equipment and conducting operational trials of the equipment for the production of vitaminized grass meal. [Text] [By A. Solov'yev] [Moscow SEL'SKAYA ZHIZN' in Russian 3 Jun 84 p 1] 1386

HIGH QUALITY GRAIN--Donetsk--Heavy freight motor vehicle trains bearing the sign "Grain for the Homeland" have moved out onto the roads in the Donetsk Basin. Yesterday they delivered the first grain of the new crop to the elevators and receiving points. The agricultural workers are striving to supply the country's granaries with more strong and valuable wheat than they have in past years. The farmers in Volnovakhiyskiy, Marinskiy and a number of



other rayons in the Donets Basin have achieved fine results as a result of having employed progressive agrotechnical methods. On many farms the cropping power of the grain crops is reaching 30 or more quintals per hectare. The border of the harvest operations is advancing from the south to the center of the oblast. Preparations have been made in all areas for receiving the flow of grain. Forced ventilation units are in operation at the elevators and grain receiving points and the weighing system is once again in operation. Coupled grain dryers are being employed and additional spur tracks have been installed. The data supplied by high speed laboratories testifies to the fact that all of the grain being received is of high quality. /Text/ /Moscow TRUD in Russian 7 Jul 84 p 1/ 7026

UKRAINIAN GRAIN HARVEST--Kiev--The front of the grain harvest operations in the Ukraine is expanding. Today the mowing and threshing of windrows is being carried out on the third million hectares of pulse crops. The harvest work is being carried out in a well organized manner on farms in the Crimean, Kherson and Zaporozhye oblasts, where the crops have already been harvested from one half of the areas. More than 13,000 harvesting-transport detachments have been created for the busy harvest season in the republic. Many of these detachments are employing the watch method of labor organization. The grain growers are striving to carry out their planned work in just 10-12 working days. /Text/ /Moscow IZVESTIYA in Russian 13 Jul 84 p 1/ 7026

TOP DRESSING EFFECTIVENESS--In the forest-steppe region of the Ukraine, a majority of the farms are not planting winter wheat following bare fallow. It is being planted in grain-beet crop rotation plans mainly following perennial leguminous grasses (alfalfa, clover), peas and corn for silage. The growing of winter wheat following corn for silage is especially complicated: the fields are made available 10-25 days prior to the optimum periods for sowing the wheat (25 August - 1 September). Under these conditions, even with timely working of the soil, very little productive moisture or mobile forms of nutrients, especially nitrogen, accumulate in the soil prior to the moment for sowing the wheat. Thus, in the forest-steppe region of the Ukraine, the application of a nitrogen top dressing to the winter wheat in the autumn or early in the spring promotes protection of the plants prior to the harvesting period. Moreover, a raised nitrogen dosage increases the number of ear-bearing stalks by 1 square meter. Resistance against lodging is lowered in the process and yet it still remains comparatively high. With top dressings of increasing dosages of nitrogen, the plants make better use of soil moisture. An autumn top dressing of nitrogen in raised dosages is more effective than an early spring top dressing. Similar to an early spring nitrogen top dressing, an autumn top dressing also improves the quality of wheat grain in terms of a complex of indicators and it increases the protein and gluten content. However, somewhat more of the latter accumulates in the case of early spring top dressings. /by Candidate of Agricultural Sciences S.A. Vertiy and Candidate of Agricultural Sciences I.G. Mikolyuk (Belotserkovskiy Agricultural Institute)/ /Excerpts/ /Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian No 5, May 84 pp 25, 29/ 7026

COMBATING ROOT ROT--In the southeastern part of the steppe region of the UkSSR, the most widespread and most harmful disease of winter wheat is that of root rot, which infects the plants throughout the entire growing season and which during some years brings about a sharp reduction in yield and a deterioration

in the quality of the grain. The harm caused by this disease has increased greatly in recent years (owing to the saturation of crop rotation plans with grain crops). Studies carried out at the Donetsk Experimental Station during the 1973-1976 period established the fact that the infection of winter wheat by root rot, following bare fallow, amounted to an average of 0-7 percent, following corn for silage -- 12-17 percent and following a stubble predecessor crop in the first year -- 30 percent and during the second year -- from 60 to 100 percent. Moreover, the crop losses reached (in percent): following bare fallow -- 5, corn for silage -- 8 and winter wheat during the first year -- 25. The causative agents of root rot in the region are represented by fungi of the Helminthosporium and Fusarium types. In the complex of measures for combating the Fusarium and Helminthosporium fungi, an important place is occupied by the chemical disinfection of winter wheat seed using fungicides. In the process, a requirement will exist for preparations which not only destroy the seed infection but which also create a definite protective zone in the plant itself and in the soil. /by Doctor of Agricultural Sciences Ye.I. Andreyeva (VNIKhSZR), Candidate of Biological Sciences A.G. Dunayevskiy, R.N. Lokhonya and L.I. Romeyko (Donetsk Oblast Agricultural Experimental Station)/ /Excerpts/ /Moscow KHIMIYA V SEL'SKOM KHOZYAYSTVE in Russian No 6, Jun 84 pp 34-35/ 7026

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DOUBLE SHIFT OPERATIONS--Odessa 2 Jul--Winter barley is being harvested in the oblast's southern rayons. The machine operators in Izmailskiy, Reniyskiy, Tatarbunarskiy and other rayons are operating in two shifts. The machine operators in Kiliyskiy Rayon have set aside 10 days for harvesting their grain crops and peas. All of the farms are adhering to this schedule. /by A. Soldatskiy/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 3 Jul 84 p 1/ 7026

HARVEST WORK COMMENCES--Zaporozhye Oblast--As always, the farmers in Akimovskiy, Priazovskiy and Veselovskiy rayons were the first in Zaporozhye to commence harvesting their grain and pulse crops. Despite the complicated weather conditions experienced during the winter and spring, the agricultural workers have developed a fine crop. This is borne out by the initial winter barley yields obtained. In practically all of the areas, the harvesting-transport complexes made fine preparations for the harvest. For example, in Akimovskiy Rayon the pulse and grain crops were cut down on an area of approximately 5,000 hectares during the first 2 days alone. Nor is the threshing of the windrows lagging behind here: they have been picked up and threshed on more than one third of the mown area. The initial dozens of tons of grain of the new harvest have been delivered to the kolkhoz and sovkhoz threshing floors. All of the farms in the oblast's southern rayons have commenced mowing around their winter wheat fields. Overall, 528 harvesting transport complexes are participating in the 1984 harvest in Zaporozhye Oblast; they must harvest grain crops on an area of approximately 700,000 hectares. Potatoes have been planted on 200 hectares at the Oktyabr' Sovkhoz in Kamensko-Dneprovskiy Rayon. All of the fields are being irrigated using water from the Dnepr River. Mechanized teams headed by the experienced machine operators P. Kolomoitsev and V. Moskalenko have commenced harvesting the early varieties of potatoes. The crop in the southern regions of the Ukraine is considerable -- approximately 100 quintals of tubers per hectare. The workers at the oblast center and in other cities have already shipped more than 320 tons of select tubers. The crop harvesting work is increasing in tempo. /by A. Pavlishin/ /Text/ /Moscow TRUD in Russian 6 Jul 84 p 1/ 7026

## POST HARVEST CROP PROCESSING

### PROBLEMS IN FRUIT, VEGETABLE PROCUREMENT DISCUSSED

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 3, Mar 84  
pp 1-2

[Untitled article]

[Excerpts] In January of this year there was an expanded meeting of the board of the USSR Ministry of Procurement, at which the following topics were examined: "On the Tasks of the USSR Ministry of Procurement Arising From the Resolutions of the December 1983 Plenum of the CPSU Central Committee," "On the Socialist Obligations of Workers of Enterprises and Organizations Within the System of the USSR Ministry of Procurement for 1984," and "On the Decision of the Commission of Legal Proposals of the Union Council and the Council of Nationalities of the USSR Supreme Soviet on the Question, 'On the Work of the USSR Ministry of Procurement to Adhere to the Requirements of the Law on Strengthening Labor and Production Discipline and on Improving Working Conditions in the Branch's Enterprises and Organizations.'"

G. S. Zolotukhin, USSR procurement minister, spoke about the first topic. He analyzed the results of work for last year and established specific goals for branch workers to be fulfilled in 1984.

He said that serious shortcomings have been tolerated in the procurement of fruit and vegetables products, especially with regard to assortment. Plans have not been fulfilled to procure melon crops, fruits, grapes and some types of vegetables. Investigations in a number of oblasts of the RSFSR, the Ukrainian SSR, the Moldavian SSR, the Georgian SSR and the Kazakh SSR revealed numerous instances of untimely and low-quality harvesting of vegetables and fruits, as a result of which great losses were tolerated, having a negative effect on the level of procurement.

In addition to this frequently we come across instances in which trade-procurement organizations and processing enterprises delay the reception of fruit and vegetable products from enterprises. This occurred in Gorkiy, Moscow, Vladimir, Tambov, Orenburg, Kuybyshev and Alma-Ata oblasts, Krasnodar Kray and the Dagestan ASSR.

Significant quantities of potatoes and fruit and vegetable products from the 1983 harvest have been put into long-term storage, and as investigations show,

in most trade-procurement organizations their preservation is being achieved. At the same time, on many bases of the USSR Ministry of the Fruit and Vegetable Industry, the USSR Ministry of Trade as well as Tsentrosoyuz [Central Union of Consumers' Societies], especially in Kiev, Karaganda, Kursk, Saratov, Orenburg and a number of other cities, instances were uncovered of a deterioration in quality and the ruin of potatoes and vegetables. Now it is essential to strengthen controls over the preservation of stored products on fruit and vegetable bases as well as in enterprises in order to maximally decrease losses of potatoes, fruits and vegetables and to more fully satisfy the demand of the Soviet people for these products.

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## POST HARVEST CROP PROCESSING

### PROGRESS, PROBLEMS IN FRUIT, VEGETABLE DISTRIBUTION

Moscow ZAKUPKI SEL'SKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 5, May 84  
pp 8-9

[Article by S. Volkov, deputy director of the state inspectorate on the procurement of potatoes, fruit and vegetables of the USSR Ministry of Procurement: "Pluses and Minuses in the Delivery of Early Fruits and Vegetables"]

[Text] In implementing the decisions of the 26th CPSU Congress, of subsequent Plenums of the CPSU Central Committee and the Food Program, workers in agriculture and procurement organizations are annually increasing the production and state procurement of potatoes, fruits and vegetables. In 1983 there was significant growth in the area sown in these crops as well as in fruit stands on irrigated lands, in seedlings for early vegetables and in the winter planting of cabbage and table root crops in order to produce an early harvest.

The material-technical base of procurement organizations and enterprises is growing with regard to the reception, shipment, storage, processing and sale of these products. In specialized kolkhozes and sovkhoses the building of hothouses and other protected-ground objects has begun and new hothouse combines are being developed. Measures are being taken to solve economic, material and social questions which will facilitate the fulfillment of the main goal--securing the year-round supply of the population with potatoes and fruit and vegetable products in a broad assortment and with good quality. Agro-industrial associations for vegetable production have been created around large cities and industrial centers. For example, in Leningrad Oblast we have the Detskosel'skoye, Ruch'i, Leto and Vsevolzhskoye; in Moscow Oblast--Vesna and Sergiyevskoye; and in Omsk Oblast--Omichka.

As a result during the years of the 11th Five-Year Plan alone as compared to the 10th potato procurement increased by 25 percent, vegetable--by 14, and fruit--by 24 percent. During the first 6 months of 1983 over 3.5 million tons, of early vegetables, or 19 percent more than in 1982, went into state and cooperative trade, including 1.4 million tons of hothouse-seedbed vegetables, or 11 percent more, vegetable greens--3 percent more, fresh cabbage--17 percent more and fresh cucumbers--9 percent more. Distributions to the population with regard to schedule improved somewhat and consumption time has expanded. At the same time, the problem of uniform year-round distribution of fruits and vegetables to the population in the needed assortment and with high quality has not yet been solved.



Cabbage and tomatoes are prevalent in total procurement volume (50 percent). Not widely distributed vegetables (peppers, eggplant, various types of cabbage and pattypan) as well as green, hothouse-seedbed and early vegetables are not produced and procured in sufficient quantities. This results in a marked seasonality in distribution to the population.

The main suppliers of early vegetables are hothouse combines, kolkhozes and sovkhozes having protected ground and usually located near cities and industrial centers and the enterprises of the southern union republics.

By 1 August the state procures about 8 percent of the total procurement volume of potatoes and 18 percent of vegetables. Within this, the volume of procured tomatoes equals 21 percent, cucumbers--66 percent, cabbage--16, not widely distributed green vegetables--43 and fruits and berries--13 percent. It would seem that this is a sufficient quantity. However, it should be noted that most of these products are sold in June and July. Thus, in 1983 of the 3.6 million tons of vegetables that were delivered during the first 6 months, 78 percent were procured in June and July; in 1982 during the same period 80 percent of 3.3 million tons and in 1981 77 percent were procured during those months. At the same time before 1 May only 7 percent of the vegetable volume procured during the first 6 months of the year are procured. During this period very little dill, parsley, lettuce and other green vegetables are cultivated.

One of the reasons for the insufficient entry of vegetables into the trade network during the early spring period is the shortcomings in the use of protected ground. Not all of its prepared acreage is utilized fully. There are various reasons for this. This includes shortcomings in management and in accounting for acreage, the absence of seed and heating, a violation of the schedule for putting structure into operation and even a shortage in the work force. There are more than enough examples of mismanagement and the incomplete utilization of acreage. Thus, in the Sovkhoz imeni Kirov of Belyayevskiy Rayon, Odessa Oblast, as of 1 July 1983 about 16,000 square meters of hothouses under film were unoccupied and have become totally worthless, but according to documentation they were counted as repaired and according to the plan early produce should have been raised in them.

In the Pravdinskiy Sovkhoz of Balakhninskiy Rayon, Gorkiy Oblast, about 12,000 square meters of spring hothouses and 2,000 seedbed frames were not used; in the Pobeda Sovkhoz of Pskovskiy Rayon, Pskov Oblast, about 16,000 square meters of winter hothouses remained empty in connection with the fact that the directors of the aforementioned enterprises were not able to provide these objects with workers in a timely manner. For this same reason some of the area of protected ground was not used in the Mal'kovskiy Sovkhoz of Tyumenskiy Rayon, Tyumen Oblast, in the Luch Vostoka Kolkhoz of Talgarskiy Rayon, Alma-Ata Oblast, the Kolkhoz imeni 50-Letiya SSSR Mikhaylovskiy Rayon, Zaporozhye Oblast and others.

As a result of the shortage of seed 200 seedbeds were not used in the Rossiya Kolkhoz of Ivanichevskiy Rayon of Volyn Oblast and 60 seedbeds in the Sovkhoz imeni Stefanik of Pustomytovskiy Rayon, Lvov Oblast. Because of the absence

of heating and irrigation in the Kamenskiy Sovkhoz of Bogorodskiy Rayon, Gorkiy Oblast, a hothouse with an area of 10,000 square meters that was ready for operation was not put to use.

As a result of the untimely introduction into operation, in the spring hothouses with an area of 9,000 square meters were not put to use in the inter-enterprise hothouse combine of Svetlovodskiy Rayon, Kirovograd Oblast. Hothouses with a capacity of 9,500 and 2,500 square meters respectively were not readied for sowing by the planned period in the Kolkhoz imeni Kirov and the Sovkhoz imeni 1 Maya of Vinnitskiy Rayon, Vinnitsa Oblast.

In a number of enterprises extremely low vegetable harvests are being produced in protected ground. Thus, in the Ukraina Kolkhoz of Glukhovskiy Rayon and the Zarya Kommunizma of Belopol'skiy Rayon of Sumy Oblast in 1982 the yield of cucumbers was only 1 kilogram per cubic meter of protected ground; at the same time in the Kolkhoz imeni Kirov of Krolevetskiy Rayon of the same oblast, i.e. under the same conditions, the productivity of cucumbers was 16 kilograms per square meter.

In the Progress Kolkhoz of Dubnovskiy Rayon, Rovno Oblast, the productivity of vegetables did not exceed 4 kilograms per square meter, and in the Kolkhoz imeni Zhdanov of Goshchanskiy Rayon of the same oblast--3.8 kilograms.

Shortcomings were also noted in the use of protected ground with regard to the turnover of crops. Up to 70 percent of the area in vegetables is still occupied by cucumbers. In the enterprises of the Ukrainian SSR, the Lithuanian SSR, the Latvian SSR and the Armenian SSR from 20 to 40 percent of the area is occupied by tomatoes. At the same time onions for vegetable purposes occupy 4-7 percent of the area in vegetables in the enterprises of these union republics.

The schedule for the arrival of vegetables, especially cucumbers, from protected ground is often planned without a consideration of their arrival from open ground. Of the total quantity of cucumbers raised in protected ground, up to 30 percent is harvested in July and August. For example, in July, August and September 1982 1,900 tons of vegetables, or 34 percent of the total produced, were sold by the Sovkhoz imeni Gor'ky of Moscow Oblast, 202 tons (20 percent) in the Belaya Dacha Sovkhoz; in the Prigorodnyy Sovkhoz of Crimea Oblast 700 tons (half) of the vegetables produced annually were raised in July-October, and in the Simferpol'skiy Hothouse Combine--1,320 tons (30 percent).

In Moscow in 1982 (July and August), because of the simultaneous entry into the trade network of cucumbers from open and protected ground, trade organizations sometimes turned away from the reception of this produce from the suburban Moscow sovkhoses, Belaya Dacha and imeni Gorkiy.

Great reserves for increasing the volume of deliveries of early vegetables to cities and industrial centers have been created in the southern union republics. Thus, in 1983 there was an underfulfillment of the plan for the delivery into the general union fund of early potatoes (up to 4 July) in the

Uzbek SSR, the Georgian SSR and the Armenian SSR, of tomatoes, not widely distributed and green vegetables (up to 1 August) in the Georgian SSR and the RSFSR, of cucumbers--in the Uzbek SSR, of cabbage and other vegetables--in the Georgian SSR and of cabbage--in the Azerbaijan SSR. As of 1 July the RSFSR had not met its quota in supplying other vegetables, the Uzbek SSR--table beets and the Georgian SSR--fresh cabbage.

From the 1984 harvest it is planned to sell the state 3.5 million tons of early vegetables, or 17 percent more than last year, including cabbage--31 percent more, tomatoes--11 percent more, cucumbers--12 percent more and other vegetables--11 percent more. In 1984 as compared with the preceding year it is planned to increase the use of protected ground by 2,500 hectares and to produce 60,000 tons of vegetables more on it than last year. Of the aforementioned volume of vegetables it is planned, by 1 August, to distribute to cities and industrial centers 859,000 tons of vegetables, which is 113,000 tons more than was indicated for 1983.

According to the plan, more early potatoes and early fruits are to be distributed to consumers from the general union fund than last year.

Data from union republics and investigations conducted by specialists of the state inspectorate on the procurement of potatoes, fruits and vegetables of the USSR Ministry of Procurement attests to the fact that enterprises and procurement organizations of union republics which are to supply early fruits and vegetables for the general union fund are better prepared for this responsible task than last year.

Vegetables are arriving ceaselessly from protected ground; the harvesting of cabbage and other early vegetables was completed in an organized manner in the Azerbaijan SSR and the Uzbek SSR. The harvesting of vegetables from open ground has also begun in the southern union republics of the RSFSR.

The supplying of early vegetables and potatoes to industrial centers in the country places a great responsibility on state procurement inspectorates, which must establish strict controls over the fulfillment of procurement plans and contractual agreements and of plans to supply consumers with early fruit and vegetable products by all enterprises and procurement organizations which were assigned to do this. The task consists of controlling the developing resources of these products and sending them to the state in a timely manner without tolerating a decreased quality or deterioration.

Increased state discipline in procurement and the strict fulfillment of contractual obligations regarding the delivery of products to the consumer in the specified time period, in the required assortment and with high quality must be the guarantees for increasing procurement and distribution of early fruits, vegetables and potatoes in cities and industrial centers.

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## POST HARVEST CROP PROCESSING

### CONCERNS REGARDING FRUIT, VEGETABLE COMPLEX EXPRESSED

Moscow SEL'SKAYA ZHIZN' in Russian 14 Jun 84 p 1

[Editorial article: "The Fruit and Vegetable Complex"]

[Text] The country's farmers have many priority concerns today. Among them is the necessary work on vegetable plantations, in orchards and vineyards. To fully satisfy the needs of the population for fruit, vegetables, berries and potatoes--this is the call of the USSR Food Program, which has indicated extensive measures to increase production, improve quality and decrease losses of products en route from the field to the consumer.

The workers of the fruit and vegetable branch are performing shock labor day and night. Planting and sowing operations have been almost totally completed. Now all attention is being focused on care for plantations and on achieving a large harvest. Today in many kolkhozes, sovkhoses and production associations sowing area has been expanded and agrotechnology has been improved. Vegetable crops are cultivated according to industrial technology on almost 100,000 hectares. A large portion of the acreage has been assigned to specialized brigades and links which have been transferred to contracts. Fresh vegetables, berries and fruits are beginning to arrive from the southern regions.

A short time will pass and the fruit and vegetable complex will begin working with full force. It is important to take energetic measures everywhere in order to make sure that store counters receive the gifts of orchards and gardens on a year-round basis. An example is provided by the largest associations in Leningrad Oblast--Detskosl'skoye, Ruch'i and Pobeda. Having completed sowing, model care for plantations was organized here. At the same time the mass harvesting of early vegetables was begun. City dwellers have already been supplied with over 20,000 tons of cucumbers, onions, sorrel, dill and other vegetables. The oblast's enterprises have decided to sell over a total of 345,000 tons of vegetables--much more than planned. The kolkhozes and sovkhoses of Azerbaijan, Georgia, the Crimea and Moldavia are increasing the delivery of fruit and vegetable products.

At the same time, as noted at a meeting of the APK [Agro-Industrial Complex] Commission of the Presidium of the USSR Council of Ministers, the necessary concern is not being demonstrated universally regarding increasing fruit and

vegetable production and fulfilling state plans for their procurement; the responsibility of enterprises and procurers for adhering to contractual obligations is poor. The season is just beginning and already there are irregularities in the fruit-vegetable conveyor. In Azerbaijan and Uzbekistan as a result of problems with transportation the shipment of early cabbage was delayed. The trade networks of a number of cities and industrial centers have insufficient quantities of cucumbers, lettuce, radishes and onions.

The experience of Kharkov Oblast speaks of ways to organize the production and supply to the population of vegetables. Here a wholesale-retail association for the fruit and vegetable trade was created. Stationary procurement points opened by it directly in enterprises delivery vegetables to specialized shops in Khar'kov. The establishment of direct ties with trade and the local procurement of vegetables are economically advantageous. Their quality has improved, costs have decreased and most importantly--the consumer can always acquire good products.

The intensification of the fruit and vegetable branch depends on the accelerated introduction of mechanized means for cultivating, harvesting and processing products and on the widespread utilization of irrigation and of the means to protect plants from diseases, pests and weeds. At present we have reached a level at which these factors decide the fate of the harvest to a significant degree. Many collectives of Moldavian enterprises and production associations have acted correctly by including the necessary technology and people and by completing weeding and irrigation in a timely manner while caring for orchards, vineyards and vegetable stands.

Special concern should be demonstrated everywhere with regard to expanding the assortment of vegetables, the preservation of the harvest and its shipment and processing; the technology that is selected should allow us to avoid harvest losses. In the Ukraine the quality composition of vegetables and potatoes and the agrotechnology for cultivating them were improved. The preparation of the material-technical base is being completed, packaging is being accumulated and hundreds of new station and reception-procurement points and seasonal points for the reception of fruits and berries from the population are being opened. At the same time, as last year's practical experience demonstrates, in the republic many enterprises did not fulfill plans on the production and delivery of onions, cabbage and watermelons. Of the grapes that were delivered, up to half were industrial varieties. A similar situation exists in Uzbekistan. Enterprises here are not satisfying orders for this year with regard to the volume of deliveries of tomatoes, sweet peppers, eggplant and red cabbage into the public fund. Many local organizations of Tsentrosoyuz [Central Union of Consumers' Societies] are not fulfilling their obligations with regard to the sale of cucumbers, fruits and melons. Today this type of situation must be corrected decisively.

The consumer wants to see high-quality produce on store counters. Nevertheless, sometimes non-standard vegetables, fruits and potatoes enter the trade network. An investigation has shown that the reason for this is the lack of adherence to the schedule and technology for harvesting, unsatisfactory sorting

and commodity processing, poor packaging and a violation of the regimen to store products. Even today, on the eve of mass shipments and procurement, a number of urgent problems have not been solved. Gosnab organizations of the eastern regions have delayed the delivery of crates for packing sweet cherries, sour cherries and plums. Workers of Magnitogorsk owe hundreds of tons of packaging nails. The problem of air tariffs has not yet been solved. At the present time they are such that southern enterprises, after delivering vegetables and fruits to northern and Siberian industrial centers, are left with losses. Railroad workers are still insufficiently concerned with decreasing the time it takes to ship perishable garden and orchard products to many cities. Special express-goods trains, which could accelerate the shipment of produce, are rarely formed locally.

The fervent season of mass processing of products for the collectives of the food industry is not far off. It must be met in complete readiness in order to procure more vegetables and fruit for winter. We cannot tolerate instances in which in some plants at the height of harvesting and shipping a large amount of produce accumulates, thereby decreasing quality and increasing losses.

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## POST HARVEST CROP PROCESSING

### MARKET STATUS OF VEGETABLES, FRUIT IN UZBEKISTAN

Moscow SEL'SKAYA ZHIZN' in Russian 17 Jun 84 p 1

[Article by A. Uzilevskiy, Uzbek SSR: "On the Way to the Sales Counter"]

[Text] The food store serving the collective of the Tashkent Plant of Electronic Technology begins its work with the reception of fresh vegetables which are delivered from the fields of the Sovkhoz imeni 21 Parts'yezd of the foothill Kalininskiy Rayon. Morning dew is on the cucumbers, tomatoes, green onions, carrots, fennel, garlic and cabbage.

"How can someone turn down such charm!" says worker Rano Sakhabutdinovak, pointing to the counters of the plant shop. "The produce is the best, and prices are 3-4 times lower than in the marketplace."

Hundreds of tons of vegetables were sent by the Sovkhoz imeni 21 Parts'yezd to its firm store. The produce does not lie around for long. Vegetable farmers call electronics workers their bosses. The plant helps the enterprise to repair equipment and supplies people for harvesting vegetables and fruits if necessary.

At the present time direct ties have been organized between the Uzbekistan Kolkhoz of Ordzhonikidzevskiy Rayon and the stores of the Tashkent Tractor Plant, the Sovkhoz imeni 60-Letiya VLKSM and an excavator plant and the Karasu Sovkhoz and the enterprises of the association, Sredazelektroapparat [Central Asian Electrical Apparatus Association]. Thirty three specialized kolkhozes and sovkhoses of Tashkent Oblast established such contacts with 54 enterprises in the capital of Uzbekistan.

No matter how frenzied nature was, early vegetables matured in Uzbekistan not much later than in past years. During the first half of May cabbage, radishes, and lettuce matured, followed by onions, garlic, carrots, table beets and cucumbers. In the gardens of kolkhozes and sovkhoses tomatoes have reddened and the tubers of early potato varieties have matured. The main thing now is to harvest as quickly as possible. The slowness of many kolkhozes and sovkhoses in the republic is incomprehensible. As of 15 June in Uzbekistan slightly over 200,000 tons of vegetables were procured, and this is 30 percent less than on the same date last year. With the exception of cucumbers and

carrots the indicator is in the minus range for the entire assortment of table vegetables. The situation is particularly unfavorable as regards the procurement of tomatoes; five times less has been procured than by the same period last year.

The pace is unjustifiably slow with regard to procuring vitaminous products in Dzhizak, Syr-Darya, Kashka-Darya, Navoi and Khorezm oblasts. In production volume for these products the second place in the republic after Tashkent Oblast is occupied by Samarkand Oblast. But here as of 15 June only 11,000 tons were procured as compared with the planned 250,000 tons. Half of the procured vegetables in Samarkand Oblast consist of cabbage.

Meanwhile, in the republic's markets the counters are full of vegetables. All of this is welcome--from fennel to large ripe tomatoes, from green onions to strawberries, sour cherries and raspberries, fresh apricots and dried apricots. It is true that there are few kolkhoz and sovkhos signs here; firm points are not crowded with state or cooperative trade. And the market salesman, as we know, sets his own prices. Meanwhile, in stores and bins cabbage heads and long hothouse cucumbers find no market.

Let us return, however, to the organization of vegetable procurement. In the Karakalpak ASSR and Khorezm Oblast, which bring up the rear in republic reports, the late and cold spring is blamed. It is true that it was late. But how do the southern oblasts--Kashka-Darya, Bukhara and Navoi--justify themselves? After all, the farmers of Surkhan-Darya Oblast were able to procure 61,000 tons of vegetables as compared with an annual plan of 101,000 tons. As of 15 June growth in the republic comprised 6 percent, in Surkhan-Darya Oblast--11 percent, and in the southern oblasts--only 1-1.5 percent.

Early potatoes have matured. They are being harvested in many zones of the republic. The Kolkhoz imeni 40-Letiya Oktyabrya of Termezskiy Rayon produced 200 quintals of tubers per hectare. A large tuber harvest was produced near Tashkent and Samarkand. Nevertheless, at the Tashplodoovoshch (Tashkent Fruit and Vegetable Association) and in other oblasts as yet there has been no mass arrival of early potatoes. It is true that the buro of trade services of Alayskiy Market in Tashkent procured tens of tons of fresh tubers from kolkhoz farmers' private plots for wholesale prices with somewhat of a reduction as compared with market prices. It should be added that the arrival of fresh vegetables prompted the directors of this largest Tashkent market to set up an additional 400 places under a light awning.

From one year to the next Uzbekistan occupies a more and more visible place with regard to supplying vegetables and early potatoes for the general union fund. Its contribution is nearing 1 million tons. But as of now the plan has been fulfilled by 33 percent. Half of this is due to cabbage. The procurement and shipment to industrial centers in the country of cucumbers, tomatoes, garlic and potatoes should have been increased long ago. Unfortunately, the consumers' cooperative of the republic has not proven itself to be very active.

According to the opinion of specialists, this is a vegetable year in Uzbekistan. But as we know, what counts is not the harvest that has matured in beds but that which reaches the consumer. And here the role of the republic's ministry of the fruit and vegetable industry, which has been called upon to organize the precise operation of the field-store-consumer conveyor, is particularly great.

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## POST HARVEST CROP PROCESSING

### STATUS OF PRODUCE EN ROUTE FROM FIELDS IN AZERBAIJAN

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Jun 84 p 1

[Article by A. Mamedov, director of the Main Administration of the Canning Industry of the Azerbaijan SSR Ministry of the Fruit and Vegetable Industry [Minplodoovoshchkhkh], and V. Belyavskiy, senior inspector of Minplodoovoshchkhkh, Baku: "Vegetables En Route"]

[Text] The moist subtropical zone of Azerbaijan has once again confirmed its reputation as the "all-union garden." Three of its rayons--Astarinskiy, Lenkoranskiy and Masallinskiy--have already sent about 200,000 tons of early vegetables to various cities in the country. And since early June they have been delivered for industrial processing as well.

A late and cold spring created many hindrances for vegetable farmers and forced them to make alterations in their work. The late maturation of the harvest of white winter cabbage resulted in the fact that its harvesting and shipment coincided with the harvesting of cucumbers, which naturally complicated work in sovkhoses as well as in procurement organizations of the republic's ministry of the fruit and vegetable industry.

Early cabbage is of excellent quality--another characteristic of this year's harvest. Despite the bad weather the harvest is one to be proud of. The cabbage is characterized by a good market appearance and a solid head.

We feel that a role was played by measures taken by the republic's Minplodoovoshchprom and RAPO [Rayon Agro-Industrial Association] with regard to the introduction of progressive forms of organizing and reimbursing labor. As a result, the number of brigades operating in vegetable farming on the principle of collective contracts has increased fourfold in comparison with last year. Family contracts are also being developed. They contributed greatly to the success of vegetable farmers in the Agdashskoye Production Agrarian-Market Association, for example. Early cabbage from Agdash was received by Moscow recipients with a high level of standardization exceeding 85 percent.

Lenkoran', the capital of the Talysh subtropics, is involved only in the concerns of the vegetable harvest today.



A rich harvest cultivated by vegetable farmers and a shock pace for harvesting enable us to unload over 3,500 tons of cabbage daily. However, because of the shortage of refrigerated cars half of this amount is dispatched here. This is occurring despite the fact that this year the workers of Lenkoran', together with railroad workers, increased the number of express-goods trains. It is necessary to await the return of the refrigerated cars.

On the initiative of the RAPO, since last year the dispatch of products by the sovkhoses themselves has been forbidden. It has been fully centralized on procurement-market bases. This year the volume of shipments of early vegetables from Lenkoran' by plane is being increased. Their dispatch to BAM [Baykal-Amur Trunk Line] builders and oil workers of Tyumen' is carried out by workers of the aviation point operating at the first procurement-market base. The Lenkoran' Truck Transport Enterprise, the largest within the system of Minplodoovoshchkhov in the republic, was included in supplying cucumbers via refrigerated trucks to Moscow, Leningrad, Kislovodsk and other cities.

At the present time the workers of the vegetable conveyor are thinking about ways to expand the assortment of early vegetables, about producing more eggplant, carrots, beets, garlic and about developing the hothouse industry, in other words about developing a universal flexible raw materials base in vegetable farming.

The order in which fruits and vegetables are transported and brought to the consumer requires sharp improvements. The problem of curtailing losses is still on the agenda. We must still introduce a container method for shipping vegetables and fruit and build modern storage facilities.

The time has come to increase responsibility for perishable goods on the part of transportation workers as well as recipients. At the present time dispatching is carried out without representatives of the recipient. Vegetable farms as well are in no condition to accompany refrigerated cars--hundreds of them would be required and it would be necessary to disband dozens of sovkhoses. Thus procurers must guess whether vegetables arrived whole, with what standardization rating the recipient accepted the goods and what the volume of losses was.

It would be expedient to assign concern about vegetables en route to workers of the refrigeration section, providing them with authority as our representatives on a contractual basis and for corresponding wages.

With each passing day the republic's vegetable conveyor is gathering strength. Sovkhoses from the southern zone have joined in mass harvesting operations. The dispatching of early potatoes has begun. Canning enterprises in the republic have been activated. In many of them improved technological equipment has been installed for the new season. Thus, for example, at the Lenkoran' Canning Combine a mechanized line has been installed for the production of tomato paste, and at the Sabirabadskiy Plant--a line for the production of marinades. The main goal of canners, who this year have



decided to produce no fewer than 500 million standard cans of fruit and vegetable canned goods, is to achieve an improvement in the quality of production and to increase the production of canned goods in small packaging.

The labor pace of the branch is determined by the decisions of the April 1984 Plenum of the CPSU Central Committee and the All-Union Economic Conference on Problems of the Agro-Industrial Complex. They provided a new impulse for the development of initiative and business-like efficiency. And this is a dependable guarantee for increasing the contribution of Azerbaijan vegetable farmers and fruit growers toward fulfilling the Food Program.

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## POST HARVEST CROP PROCESSING

### TRADE NETWORK RECEIVING FRUITS, VEGETABLES

Moscow PRAVDA in Russian 4 Jul 84 p 1

[Article by K. Aksenov, Krasnodar: "Both Grains and Vegetables"]

[Text] On Kuban' fields the pace of harvesting increases from day to day. Many rayons have completed the threshing of barley. PRAVDA has already reported on the course of harvesting on the kray's fields. The harvesting of the main grain crop--winter wheat--has also begun. It must be harvested from an area of over 1.5 million hectares. Not only grain farmers, but vegetable farmers and gardeners have many concerns now. Cucumbers, marrow squash, greens, sour cherries and sweet cherries are being harvested...Each day tens of tons of vitaminous products are sent to the trade network from vegetable plantations.

An unusual advertisement appeared recently in vegetable shop number 2 on Ofiterskaya Street. In the market hall in a visible place is a britzka [light carriage] loaded to the top with greens, vegetables and berries--everything that the Kuban' is rich in. It is as if before dawn a concerned driver drove through fields and orchards to collect the gifts of the land for people.

The agricultural-production trade association has been operating in Krasnodar for 2 years now and includes six sovkhoses and a trade organization with a network of stores. Not a great deal of time has passed since the creation of the association. But the changes have been impressive. Let us say that the earnings from the sale of vegetables increased from 20 million to 30 million rubles. The yield per hectare increased by one fourth.

What are these changes related to? First of all--to the new organization of labor. Previously, brigades, specializing in the cultivation of the same vegetables, "wandered" through crop rotations and did not worry too much about soil fertility.

Now crop-rotation plots have been created in some sovkhoses. All of them specialize in the production of several types of products and have been transferred to a contractual basis.

"The fields have been assigned to specific individuals," says the director of the fifth section in the Pashkovskiy Sovkhoz, L. Grishina. "We raise potatoes, onions, garlic and other crops. Each piece of land is registered. If radishes are harvested, for example, cabbage must be planted in their place immediately. The more produce, the higher the remuneration..."

Other collectives have also "gotten a taste" of cost accounting. Each of them is striving to exceed its assignments, expand the assortment of products and improve quality. Not the fulfillment of norms but the yield of vegetables per hectare and gains from sales have become the criterion for evaluating labor.

There is one more detail. During a short period of time sovkhoses developed a scientific scheme for intra-enterprise specialization. Vegetables are now placed not in "dwarf" plots of land but on large land masses where equipment can be utilized.

"There have been no problems with sales," says the general director of the association, S. Stel'nikov. "We work according to the principle: field--store."

Sovkhoses supply fresh greens and vegetables not only to the 32 stores of Agroploodoovoshchtorg [Agricultural Fruit and Vegetable Trade Network] but also to the small retail network--hawker's stands, evening bazaars and stalls. There are over 200 of these in the city. In industrial enterprises and at building sites there are 30 order tables in service.

At the present time the new association is producing 90 percent of the vegetables of the "foothill shop." But gross output is not the point, of course. There has been a noticeable expansion in the area sown in non-widely distributed crops--parsnip, rhubarb and coriander. Onions, fennel and lettuce are now sown here on 3-4 schedules. Hothouses are also utilized better.

The "field-store" conveyor has a great future. However, there are quite a number of unstable links in its operation. There is a shortage of special transport vehicles, packaging and packing materials. Vegetable farmers are waiting for new machinery from designers for cultivating and harvesting many crops.

At the beginning of the season in some stores in Krasnodar there were delays in trading of vegetable products. But probably the weakest point is supplying city residents with fruit.

It happened that unpretentious apple trees "crowded out" peach and apricot trees from the suburban orchard. Rarely does one see alycha [kind of damson], sweet cherries, sour cherries and currants in stores.

Recently the kray executive committee made a decision on the further development of Agroploodoovoshchtorg. Sixty million rubles were allocated for this

purpose. During the coming 5-6 years it is planned to equip enterprises with new machines, to increase the irrigated acreage and to build several store-houses and refrigerators as well as housing and kindergartens. The network of stores will also expand. The fulfillment of these plans will enable us to offer the consumer vegetables to suit any taste.

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## POST HARVEST CROP PROCESSING

### MEASURES TO IMPROVE HARVEST TRANSPORT OPERATIONS

Tashkent SEL'SKOYE KHOZYAYSTVO UZBEKISTANA in Russian No 5, May 84 pp 47-50

/Article by L. Akhmetov, Doctor of Economic Sciences and general director of Uzavtotranstekhnika Scientific Production Association and L. Bazhan, Candidate of Economic Sciences: "Reserves for Improving Work of Transport Complex"/

/Text/ In solving the Food Program, exceptional importance is attached to the role to be played by transport. Transport support for the agroindustrial complex, it was emphasized during the May (1982) Plenum of the CPSU Central Committee, is an important task of the Food Program.

The transporting of national economic freight in the Uzbek SSR, particularly agricultural freight, is carried out mainly using three types of transport: motor vehicle, railroad and air.

Motor vehicle transport occupies a dominant position in the transporting of freight. This is the result of a number of factors, the most important of which is associated with the great scope of new land development, where the farmsteads of new kolkhozes and sovkhoses are appearing, farms which are often located hundreds of kilometers from the oblast centers. For such farms, motor transport is the only means for transporting freight and passengers.

Twelve ministries and departments with their own motor vehicle pools are carrying out motor vehicle shipments for all types of freight throughout the republic. The volume of shipments is increasing with each passing year and their volume with regard to overall transport operations in Uzbekistan is also increasing. At the present time, these shipments account for 93.8 percent of the entire volume of transport operations.

All enterprises and organizations having motor transport equipment are participating in one way or another in carrying out the Food Program. But the greatest contribution towards implementing this program is being made by the collectives of motor vehicle enterprises of the Uzbek Ministry of Motor Transport. More than 70 percent of the republic's agricultural output is being transported by general purpose transport equipment.

At the present time, the transporting of freight and passengers and transport services for the population in 145 rayons throughout the republic are being carried out by motor vehicle enterprises and motor vehicle columns. A large number of motor vehicles of Minavtotrans /Ministry of Motor Transport/ is

concentrated in the rural regions. In conformity with their distribution, a complex of measures is being carried out aimed at improving transport support for branches of the APK /agroindustrial complex/ and its associated enterprises.

New designs are being developed for the rolling stock and existing ones improved, extensive use is being made of motor vehicle trains and leading methods for organizing transport operations are being introduced into operations.

In connection with the national economic complex and the all-union division of labor, Uzbekistan has been assigned the role of serving as the chief producer of cotton. And the branch's motor transport workers are actively participating in the work of solving this task. Each year the cotton is being transported by 1,500 motor vehicles of the ministry, which haul more than 3,600,000 tons of cotton and up to 2 million tons of cotton seed annually.

A great amount of work has been carried out throughout the republic directed towards optimizing and raising the efficiency of raw cotton shipments by motor vehicle transport. It was Minavtotrans for the Uzbek SSR which, for the very first time in our country, carried out bulk shipments of raw cotton on a large scale. At the present time, 60 percent of the crop being harvested is being shipped by means of this effective method.

Each year the transporting of grain and rice is carried out by 2,500 motor vehicles. During a season they deliver more than 2 million tons of grain to the elevators. The same number of motor vehicles transport 2.5 million tons of vegetables and fruit annually. The use of specialized rolling stock is promoting improvements in the efficiency of agricultural freight shipments. Thus, almost all of the raw cotton being harvested is being transported by heavy freight motor vehicle trains. The transporting of cotton seed over great distances to oil and fat enterprises is also being carried out by motor vehicle trains and dumptruck semitrailer seed carriers. TAS-34 dumptruck semitrailer-seed carriers have been developed and introduced into operations for transporting grain to milling combines. The branch's motor vehicle enterprises have 127 specialized motor vehicles for transporting vegetables, fruit and other products in containers; this ensures their maximum preservation and at the same time it permits the mechanization of loading and unloading operations.

Definite progress has been achieved in organizing transport shipments by rail and air. The transport complex on the whole, from one five-year period to the next, is ensuring fulfillment of the national economic plans. However, specialists attached to the Uzavtotranstekhnika NPO, which is concerned with implementing improvements in scientific-technical progress for motor transport purposes, having analyzed the work of the republic's transport complex in light of the decisions handed down during the May Plenum, drew the conclusion that we still have many unused reserves, the use of which would aid in satisfying more completely the requirements of the agroindustrial complex. A thrifty, thoughtful and responsible approach must be employed in connection with the efficient use of the logistical potential which the republic's transport service has at its disposal and also the experience accumulated in organizing shipments.



And this potential is great and considerable experience has been accumulated in organizing transport operations and interaction among all of the elements in the transport production line. The party and government are displaying concern for improving the operation of the transport complex and they are constantly allocating considerable capital investments for its development. Thus the volume of capital investments alone for strengthening the logistical base for the republic's motor transport operations, for 12 ministries and departments of Uzbekistan, increased during 1980 by 71.5 million rubles compared to the figure for 1975, or by 69 percent. A considerable portion of the motor pool was replaced and the overall capability of the republic's motor vehicle pool was increased by 34.5 percent.

Cooperation between motor vehicle and rail transport is improving. Following the example of the Leningrad and Odessa transport workers, the republic's Minavtotrans concluded an agreement with the collectives of 13 railroad stations for the transporting of containers in accordance with the direct variant "motor vehicle - freight car" and "freight car - motor vehicle"; this made it possible to reduce the idle time of rolling stock while awaiting loading operations by more than 4,500 hours annually.

A portion of the uneconomical short-run freight shipments is being transferred from rail to motor transport operations and this is making more than 5,200 freight cars available for other work each year.

Increases are taking place in the volumes of inter-city freight shipments and in the loading of empty motor vehicles going in the same direction.

The annual empty runs by motor vehicles have now been lowered by more than 45.5 million kilometers. Thus, in addition to increasing the volume of shipments, this also makes it possible to save more than 32,000 tons of conventional fuel.

The examples cited testify to the fact that definite progress has been achieved in organizing the transport process by the republic's motor transport organizations. However, an objective analysis reveals still another factor: the technical and economic potential which the republic's freight motor transport organizations have at their disposal is by no means being used completely. Here is some objective data drawn from this analysis. Whereas, as mentioned above, the total capability of the republic's motor vehicle pool increased during the 10th Five-Year Plan by 34.5 percent, the freight shipments of 12 ministries and departments having motor vehicle pools increased by only 24.2 percent during this period.

In analyzing the transport operations, the specialists of the Uzavtotranstekhnika NPO studied the status of affairs for individual types of shipments and for the entire transport production line as a whole. Moreover, a search was undertaken for reserves which could be used for satisfying the requirements of the agroindustrial complex, taking into account the growth in the production volumes for all types of agricultural products.

During the 11th Five-Year Plan, further development is called for in all of the agricultural branches of Uzbekistan and particularly in cotton production. Thus the problem of efficient transport shipments, especially when one considers that transport expenses occupy one third of the cost of raw cotton procurements, is of great importance.

In order to lower transport expenses for cotton shipments, extensive use must be made of specialized rolling stock -- large freight motor vehicle train-cotton carriers. Towards this end, the plans call for the industrial enterprises of Minavtotrans to produce 2,000 dumptruck trailer-cotton carriers, each with a carrying capacity of 4,000 tons, during a five-year period. A progressive method for transporting raw cotton -- shipments in accordance with the plan "cotton field - cotton plant," -- thereby bypassing the procurement point, will be introduced into operations on a more extensive scale.

In the interest of reducing transport expenses, the association's specialists developed a standard technological method for transporting raw cotton, which calls for a more expedient method and system for utilizing warehouse areas, loading and unloading equipment and rolling stock.

Grain production is constantly increasing in Uzbekistan and, as a result, the grain transport volumes are also increasing. Each year, hundreds of brigades of drivers who operate on the basis of the progressive Ipatovo method are sent into the republic's grain growing oblasts. However, the organization of grain shipments on the whole is fraught with many negative phenomena and unused reserves, including large losses which can amount to 8-10 percent and which occur along the entire route leading from the field to the pouring of the grain into an elevator hopper.

Attention must be given here to these facts. Fewer losses are sustained when the grain is transported by general purpose motor transport drivers and considerably greater losses -- drivers of departmental transport. The fact of the matter is that the drivers of general purpose motor transport have accumulated definite experience in the transporting of grain crops: the motor vehicle columns and the brigades of drivers who operate out on the fields during the entire harvest season are staffed in a timely manner, the motor vehicles are specially equipped for the transporting of grain and repair workers are assigned to the driver brigades.

The situation is entirely different in the case of departmental motor transport operations. Many of the departmental motor transport enterprises supply motor vehicles for transporting the grain which have damaged sides and floors. There have also been instances of motor vehicles being used for transporting grain immediately after hauling inert materials, fertilizers, petroleum products and so forth. As a result, the marketable grain must be reclassified as technical grain.

The freight carrying capability of the motor vehicle pool is being lowered to an extreme degree owing to the absence in a number of oblasts of appropriate weighing equipment. For example, in Dzhizak Oblast, which is supplied with a large number of motor vehicle trains each year by Minavtotrans, the authorities are able to use only 50 percent of the potential of these trains, in view of the fact that no weighing equipment is available. The use of trailers must be rejected.

An important reserve for satisfying the needs of the agroindustrial complex is the efficient use of rolling stock: an increase in the volume of inter-city freight shipments, the loading of empty motor vehicles proceeding in the opposite direction, transferring a portion of the freight from rail to motor transport shipments and so forth. The volumes of inter-city freight shipments



and the loading up of motor vehicles going in the same direction will continue to increase during the 11th Five-Year Plan.

However, in addition to the results already achieved, mention should be made of the fact that the proportion of inter-city shipments is still quite low -- on the order of 16 percent of the freight turnover. And this is in spite of the increase that has taken place in the absolute volumes of inter-city freight shipments carried out by motor transport. As a result, efficient and effective measures must be undertaken aimed at increasing the volumes of motor vehicle inter-city shipments by at least 5 percent and freight turnover -- by 30-40 percent.

Great importance will also be attached to motor vehicle inter-city freight shipments in connection with implementation of the Food Program adopted during the May (1982) Plenum of the CPSU Central Committee, since there is a broad nomenclature of agricultural freight (products) which can be transported more effectively and in a high quality manner by means of this method.

The inspections carried out by the Uzavtotranstekhnika NPO with regard to the freight and motor vehicle flow lines in inter-city trade to the Kara-Kalpak ASSR and oblasts have made it possible to uncover the volumes of short-run railroad shipments for certain agricultural products which ideally should be turned over to motor transport, the shipment volumes for agricultural freight carried out by departmental motor transport and future volumes -- by general purpose motor transport.

Type of Agricultural Freight	Short-Run Rail Shipments Which Ideally Should Be Turned Over To Motor Transport, in tons	Shipment Volumes For Agricultural Freight by General Purpose Transport, in tons	Ideal Future Shipment Volumes For Agricultural Freight by General Purpose Motor Transport, in tons
Seed	141466	11324	182879
Mixed feed	59180	57480	36360
Grain	63311	15154	47252
Rice	33657	4194	1800
Melons, vegetables and fruit	9406	77412	9115
Other	6190	65070	136080
Total	324210	230634	413486

It is apparent from the table that in connection with future inter-city shipments of agricultural freight, with short-run rail shipments being turned over to motor transport, the highest proportion belongs to the transporting of seed, for which purpose the PKhS-7 semitrailer was created at the Uzavtotranstekhnika NPO. This dumptruck semitrailer with a carrying capability of 7 tons and mechanized unloading on one of its lateral sides is intended for the transporting of seed, containers and agricultural loose and unitized freight. During the 1979-1981 period it was produced by the Samarkand Experimental-Mechanical Plant. The practical operation of the semitrailer at

motor transport enterprises testifies to its effectiveness (the annual economic savings realized from the introduction of one KAZ-603 motor vehicle train with a PKhS-7 semitrailer amounts to 8,300 rubles).

However, commencing in 1982 the production of semitrailers at this plant was terminated. Based upon present and future seed shipment volumes, a requirement exists for renewing the production of PKhS-7 semitrailers. This will make it possible to accelerate the seed delivery schedules, ensure more efficient use of the motor vehicle rolling stock and lower to some degree the tense nature of the railroad work.

In the future volumes of agricultural shipments by general purpose motor transport, a considerable role will be played by raw cotton deliveries (55,900 tons) from Syr-Darya and Dzhizak oblasts to the Fergana Valley and Tashkent Oblast, cotton fiber (22,600 tons) and cotton lint (26,280 tons).

In order to ensure the efficient carrying out of these shipments, a requirement exists for developing progressive designs and producing semitrailers with a freight carrying capability of 12-14 tons, for use with motor vehicle trains and employing KamAZ motor vehicles, and for carrying out work concerned with improving the organization and administration of the transport technology. Scientific research work must also be carried out directed towards improving the transporting of highly perishable agricultural products in inter-city trade, especially during the crop harvesting period and ensuring the preservation and marketable appearance of the freight, with minimal delivery periods and transport expenses.

In defining the role and importance of motor transport for solving the tasks called for in the Food Program, it should be emphasized that the transport process must be viewed as an inalienable and component part of production, transporting, processing and consumption of the agricultural products. As a result, an all-round approach should be employed for the problems concerned with improving agricultural freight (products) shipments by motor vehicle transport and these problems must be solved taking into account all aspects of this complicated process.

The condition of the highway network is of great importance with regard to rhythmic and timely deliveries of agricultural products with minimal transport expenditures. The insufficient length of motor vehicle roads (especially hard surface roads) increases the delivery time and also wear and tear of the vehicles and this leads to over-expenditures of spare parts, materials and fuel-energy resources, to increases in the production costs for transport operations, to losses and product spoilage and also to highway-transport accidents. This is why a requirement exists for expanding the construction and modernization of existing roads in the interest of ensuring stable and reliable motor vehicle communications between rayon centers and populated points, the central farmsteads of kolkhozes and sovkhoses and their branches, sectors and brigades.

In conformity with solving the tasks of the Food Program, the plans call for a large number of trucks and milk tankers to be made available for satisfying the needs of agriculture and other branches of the agroindustrial complex.

Ideally, this rolling stock should be turned over mainly to the general purpose transport authorities for providing special services for the APK /agroindustrial complex/ branches, since here the operational level of the transport equipment is considerably higher than that at departmental enterprises. Actually, in the operation of general purpose motor transport a great amount of experience has been accumulated in production concentration, lowering the production costs for shipments and organizing control over the technical servicing and repair of rolling stock on an industrial basis. For it is here that leading methods have been developed and employed for organizing labor and administering shipments and it is here that a stable contingent of highly skilled workers has been formed.

A chief reserve for raising the operational efficiency of motor transport, for the country as a whole and also for the republic in particular, and also for releasing a considerable portion of the rolling stock required for meeting the requirements of the APK, is that of achieving a radical structural reorganization of motor transport in light of the basis instructions handed down during the 26th CPSU Congress, where it is stated: "Motor transport must ensure a further strengthening of the logistical base and leading development for general purpose transport. To continue the concentration of transport resources at large motor vehicle enterprises."

Many years of experience have shown that the technical-operational results in terms of all of the principal indicators of general purpose motor transport, for the country and for our republic, are considerably higher than those being achieved by departmental motor transport.

Here are some examples of work performed by general purpose motor transport, compared to the indicators for other ministries and departments. Minavtotrans for the Uzbek SSR has at its disposal only 18 percent of the overall freight carrying capability of the republic's motor vehicle pool and yet it transports almost 30 percent of all of the freight. For Uzbekistan as a whole, motor vehicle shipments during the 10th Five-Year Plan increased by 24.2 percent and in the case of general purpose motor transport -- by 46.3 percent, while at the same time an increase of only 16.6 percent was recorded for departmental motor transport shipments.

Here are several more examples testifying to the advantages of general purpose motor transport compared to departmental motor transport. A general quality indicator of the effectiveness of use of rolling stock -- the productivity for one average-registered motor vehicle ton for general purpose motor transport is higher by a factor of 1.3-2.7 than that for departmental motor transport. Moreover, during the 10th Five-Year Plan this indicator for general purpose motor transport increased, while that for many ministries decreased: for Uzbekbriyashu -- by 31.6 percent, Minpromstroy materialov /Ministry of the Construction Materials Industry/ -- by 14.8 percent, Ministry of Highway Construction and Maintenance -- by 13.1 percent and so forth, and this on the whole tended to lower the productivity of the republic's motor vehicle pool.

In the recently adopted decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Raising the Efficiency of Use of Motor Transport Equipment in the National Economy, intensifying the campaign against codicils

in freight shipments by motor transport and ensuring the preservation of fuel and lubricating materials," the ministries and departments having motor transport equipment were assigned the task of improving their use of rolling stock and overcoming shortcomings in the work of one of the most important elements of the country's transport system. The shortcomings mentioned in the decree are to a definite degree inherent in Minavtotrans for the Uzbek SSR. But the status of affairs is even worse in the case of departmental motor transport. Thus during the 10th Five-Year Plan the motor vehicle enterprises of general purpose motor transport raised the coefficient of use for motor vehicle runs to 0.58. This was higher by a factor of 1.2-1.9 than that for departmental motor transport. The motor vehicles of a number of ministries and departments carry out 60 percent of their runs in an empty state. And this trend is increasing rather than decreasing. Thus, where in 1975 the empty runs by departmental motor transport vehicles were higher by a factor of 1.2 than those for general purpose motor transport, in 1982 this ratio increased to a factor of 1.3. In 1980 alone, 1,025,100,000 liters of gasoline were expended in an unproductive manner for empty runs, including by departmental motor transport -- 703,200,000 liters of gasoline -- 68.6 percent of the overall quantity. The freight carrying capability of the motor vehicle pool of departmental transport is not sufficiently effective. Where this indicator is 1.29 for general purpose motor transport, at a number of ministries and departments it is lower by a factor of two.

Such are the facts. They clearly indicate and the decree of the CPSU Central Committee and USSR Council of Ministers confirms the fact that all of the advantages are on the side of general purpose transport and that a preference should be shown for developing such transport.

The dispersion of motor transport equipment, especially that of freight motor vehicle transport, must be eliminated. Indeed, what is the situation at the present time? The freight motor vehicle pool is presently distributed among 3,765 motor vehicle establishments throughout the republic, with more than 90 percent being located at low profitability motor vehicle enterprises having less than 50 motor vehicles. And this leads to overexpenditures of logistical resources and fuel and lubricating materials, to counter shipments, above-normal vehicle idle time waiting to be loaded or unloaded and to other shortcomings cited in the above-mentioned decree of the CPSU Central Committee and the USSR Council of Ministers.

It must be remembered, as noted during the December (1983) Plenum of the CPSU Central Committee that "...transport plays a very special role. A role that is economical, political and psychological." Thus a need will exist in the future for concentrating motor pools at large motor vehicle enterprises of general purpose motor transport by eliminating small motor vehicle enterprises and transferring a portion of the departmental transport over to the Ministry of Motor Transport for the Uzbek SSR.

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## POST HARVEST CROP PROCESSING

### TRANSPORT ARRANGEMENTS FOR HARVEST PRODUCE

Moscow SEL'SKAYA ZHIZN' in Russian 12 Jul 84 p 2

/Article by M. Zarayev: "Field - Freight Car - Silo"

/Text "Field - Freight Car - Silo," such was the title of the discussion held with the 1st Deputy Minister of Railways for the USSR V.N. Gin'ko, dedicated to the problems concerned with organizing shipments of agricultural products.

This discussion on the pages of SEL'SKAYA ZHIZN' took place towards the end of the last procurement season. Recognizing the just nature of many complaints registered against the railroad workers by representatives of many elements of the APK /agroindustrial complex, V.N. Gin'ko presented just complaints against the leaders of those branches responsible for above-normal freight car idle time and at times inefficient counter shipments of freight.

Among such branches -- the grain procurement branch. The editorial board received a reply to the questions raised from the Deputy Minister for Procurements of the USSR V.A. Anikin. He reported upon the measures undertaken to raise the level for the routing of grain shipments and to raise it last year to 30-35 percent. A great deal has been accomplished in the branch aimed at mechanizing the loading and unloading of freight cars. Over the past 2 years, more than 1,000 receiving and unloading units have been placed in operation, two thirds of which were adapted for use with grain carriers. A vast program of work must be carried out prior to the end of the five-year plan.

But what type of return can be expected from such a measure? Indeed, the chief criterion here is that of reducing the idle time of freight cars during loading operations and reducing the difference between the actual and normative periods of time that they spend on spur tracks or, in the words of the specialists, the excessive amount of freight car idle time.

"Over a period of 5 months this year, it was lowered by 0.11 hours compared to the same period for last year" stated an official of the Ministry of Procurements.

It can be stated directly that the result was not very comforting, especially when you consider that against a norm of 3.07 hours the freight cars loaded with grain on spur tracts and at the unloading platforms of grain receiving

enterprises lay idle for an average of 4.17 hours. Eleven hundredths compared to such indicators -- a negligible figure.

The problem of counter shipments of grain, which arise as a result of a shortage of milling capabilities in a number of oblasts throughout the country, continues to be acute. This shortage is especially critical in Kazakhstan, Central Asia and in the Trans-Caucasus. Meanwhile, there is a surplus of such capabilities in the European center of the country. At the present time, the logistical base of the milling and groats industry is being strengthened and its capabilities are being increased in those regions where there are insufficient mills. The schedules for reducing the number of counter shipments are dependent upon the efficiency with which this work is carried out. The Ministry of the Fruit and Vegetable Industry is not promising any radical streamlining of shipment operations this year. Deputy Minister P.P. Volkov has informed the editorial board that the development of a general plan for efficient shipments of fruit and vegetable products, using all types of transport, is nearing completion in the ministry. This plan will serve as the basis for preparing plans for normal trends in the flow of this freight.

The deputy chief of a department of USSR Gosplan, V.V. Pavlov, wrote concerning the importance of such an approach to the work. A requirement exists for centralized management for crude feed deliveries. Indeed, each year the railroads transport from 500,000 to 3 million tons of straw from the procurement regions to those areas where, owing to the weather conditions, this feed is lacking and this also leads to counter and excessively long shipments. The Inter-departmental Committee for the Streamlining of Freight Shipments of USSR Gosplan has handed down a recommendation to the union Ministry of Agriculture calling for the development of plans for procuring coarse feed, in the interest of supplying such feed to consumers from nearby regions.

In the discussion entitled "Field - Freight Car - Silo," mention was made of the annual practice of rail shipments of millions of tons of sugar beets over distances of 10-20 kilometers, which also leads to repeated transshipments and freight delays. Comrade Pavlov reports that Gosplan for the Ukraine, as early as 1981, prepared recommendations for shifting 4 million tons of beets over from rail to motor vehicle transport and closing 68 station beet receiving points. However, the introduction of these recommendations is being delayed owing to shortages of fuel and labor resources for motor vehicle transport and also because of a lack of intra-farm hard surface roads.

But resources nevertheless are still being expended for delivering the beets, even if by rail. Thus, why cannot they be redistributed in the proper manner?

Yes and hard surface roads could be built during the years following the introduction of these sensible recommendations.

The responses sent in to the editorial board confirm once again the present need for an all-round approach for solving the problem concerned with streamlining the shipments of agricultural freight.

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## LIVESTOCK FEED PROCUREMENT

### RSFSR PASTURE CROP PRODUCTIVITY DISCUSSED

Moscow SOVETSKAYA ROSSIYA in Russian 19 Jun 84 p 1

[Article: "Summer Pastures"]

[Excerpt] Summer is the most abundant time for animal husbandry. The herds have gone out to pasture. The "green conveyor" has begun to operate, delivering abundant and inexpensive feeds to the farms ... But this is also the most responsible time. It is possible to provide for high productivity of the animals if the farms have promptly put the pastures in order, especially the irrigated ones, and changed the public herd over to summer maintenance in an organized way.

Kalinin, celebrated the Day of the Land Reclamation Worker in Moscow, at the Exhibition of the Achievements of the USSR National Economy. It was no accident that he received an invitation. On the kolkhoz they have been seriously using irrigation for a long time. There are 1,800 hectares of irrigated land /n the farm. Some of it has been singled out for perennial crop pastures. The cattle go to them in April and will remain there until deep into autumn, receiving abundant feed which is varied in composition. Farm specialists -- agronomists and zootechnicians -- have seen to this, having envisioned for the "green conveyor" a selection of crops which ripen at various times.

Of course it is not easy to plant crop pastures, and it requires large expenditures. But they are recouped one hundred fold. On this same Kolkhoz imeni Kalinin the productivity of the public herd has increased, the farm is confidently increasing the production of meat and milk from year to year, and it is fulfilling state plans.

This is only the economic side. The other side is that the utilization of intensive pastures for almost 8 months reduces the expenditure of feeds and makes it possible to create a solid supply of them for the winter. Most of the animal husbandry products are produced during the summer, with inexpensive feeds which, in turn, reduces the production cost of milk and meat.

Perennial crop pastures are handled well in Stavropol, in Krasnodar Kray, Tatariya and Ivanovo Oblast. But in a whole number of regions, and above all

in the nonchernozem zone, the Ural area and Western Siberia there are still few real crop pastures.

The pastures of Russia are considerable in size. They occupy 4,255,000 hectares and, according to calculations of specialists, they should more than provide the livestock with juicy feeds. But the problem is that they are not very productive. Of the overall quantity of pastures, 333,000 are located on irrigated land, and far from all of these can be called perennial. Most of the grazing land is comprised of natural meadows.

In recent years, since feed production has been separated into a separate branch, on many farms a considerable proportion of the planted feed crops are located, as a rule, on irrigated land. Their yield goes mainly for winter supplies. Only a small part of it is distributed to the cattle during the summer. This is why it is important to be concerned about effective utilization of all categories of pastures, so as to achieve high yields and large weight gains of cattle, and to increase the production and sales of milk and meat.

One must say that the construction of perennial crop pastures on irrigated land is being largely retarded by land reclamation workers. They are not very willing to get involved in planting and restoring meadows, or constructing dams on small rivers or irrigation systems on flood plains. These jobs, as a rule, are labor-intensive, and they are not very advantageous from the standpoint of the plan. The RSFSR Ministry of Agriculture has given the figures. Beginning with the 10th Five-Year Plan, land reclamation workers have failed to provide almost a million hectares of irrigated land which is intended for crop pastures. It is difficult even to imagine the quantity of products the farms have failed to receive because of the "shortages" of this partner of the kolkhozes and sovkhoses in the agro-industrial complex.

Irrigation will be further developed in the next few years. But it is important not to seek out local reserves for expanding the irrigated area planted in pastures and to create guaranteed grazing land for the public herd. The Novozhiznenskoye Sovkhoz in Gorodishchenskiy Rayon in Volgograd Oblast has taken precisely this path. Here they noticed that the plots of land adjacent to the main canals are frequently not used and are overgrown with weeds. Calculations showed that there are more than 300 hectares of this kind of land on the farm. Through their own efforts they developed a plan for additional irrigation of these plots and planted them in perennial grasses. The farms thus received additional areas for pastures. If one looks attentively, such reserves exist on many farms. It is possible to accumulate flood waters for irrigation, to build small dams on small rivers, to construct ponds and other bodies of water ...

The selection of crops is very important for increasing the productivity of crop pastures. Farm specialists must be concerned first about making sure that there are enough crops which are varied both in terms of their composition and in terms of their ripening times. The "green conveyor" must begin to operate as early as possible and provide the cattle with juicy feeds throughout the entire pasture period.

Winter rape has proved to be excellent as an early feed crop. On the kolkhozes and sovkhozes where it is cultivated the animals begin to receive green feeds beginning in April. Rape is also good because it produces high and stable yields of nutritive feeds. On the Kolkhoz imeni Budnenniy in Predgornyy Rayon in Stavropol they receive 220 quintals of its green mass per hectare. Feeding this to the cattle made it possible to increase the milk yield considerably.

True, it is not easy to arrange to plant rape. There are not enough seeds. Incidentally, this is the situation with other seeds besides rape. As before, the farms are experiencing a shortage of seeds of clover, sainfoin, alfalfa, certain meadow grasses and early ripening strains of corn. Domestic seed growing is still greatly in debt to farmers. But this certainly does not mean that we can sit with our arms folded. In places where they are really concerned about summer pastures they plant their own seed plots, propagate the necessary crops and care for them constantly.

Natural pastures, which comprise most of the pasture area, can also be highly productive if one cares for them, plants grasses, applies fertilizer, and cuts down hummocks and bushes. But in many rayons this kind of agricultural land is in a neglected condition and therefore poor in feeds.

The changeover to pasture maintenance of cattle requires careful and comprehensive preparation. First of all it is necessary to be concerned about creating good summer camps for the dairy herd as well as for the grazing herds. It is necessary to provide drinking water for the animals, to ship in mineral supplements and to arrange zootechnical and veterinary service. It is especially important to be concerned about technical support for the summer camps. It has been noted that with the changeover to pasturing there is a reduction of the labor productivity of the milkmaids. This happens because the camps are equipped with small milking machines and a whole number of operations are performed by hand. During the summer period there is special concern for product quality. This depends largely on how the cooling of the milk and its transportation are arranged.

All these issues should always remain within the field of vision of the RAPO council and farm specialists. When developing measures for changing the farms over to summer conditions, they must plan for all kinds of trivia. It is necessary for the partners of the kolkhozes and sovkhozes in the agro-industrial complex -- Sel'khoztekhnika divisions and dairies -- to participate in this work.

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## LIVESTOCK FEED PROCUREMENT

### FEED STORAGE PROBLEMS IN RSFSR NOTED

Moscow SOVETSKAYA ROSSIYA in Russian 28 Jun 84 p 1

/Article by inspection team of Yu. Kirillov, A. Peshkov and Z. Fedorova; Omsk - Kurgan - Chelyabinsk - Moscow: "A Roof for Feed"/

/Text/ In the Food Program, a very important place is occupied by feed for animal husbandry. There must be as much concern for feed as there is for grain.

In 1984, the plans for Russian farms call for an increase in the storage capacities for all types of feed: by 17 million cubic meters for silage and haylage and by almost 400,000 tons for root crops. Special importance is being attached to facilities for granules, briquettes and grass meal. However, today's rates for the construction of feed storehouses in a number of oblasts are arousing considerable concern, especially in those areas where last year the plans for placing such facilities in operation were not fulfilled. These plans have been disrupted since the beginning of the five-year plan in such oblasts as Kirov, Tula, Novosibirsk, Astrakhan and Vologda and also in the Buryat and Tuva autonomous republics. And here the kolkhozes and sovkhoses are equipped with silage and haylage storehouses sufficient for only 40-50 percent of their requirements. Last year the plans for root crop storehouses were not fulfilled on farms in Kalinin, Leningrad, Lipetsk and Tambov oblasts, despite the fact that there was a great shortage of these facilities. Our correspondents visited kolkhozes and sovkhoses in Omsk, Kurgan, Moscow and Chelyabinsk oblasts in order to learn what preparations are being made here to receive this year's feed.

#### Hay Under a "Cap"

There is much for a visiting specialist to see at the Rossiya Breeding Plant in Sosnovskiy Rayon, Chelyabinsk Oblast. This farm surpasses many others in terms of its average annual milk yields. Here they are obtaining almost 5,000 kilograms per cow annually. The director, Ivan Vasil'yevich Grigor'yev, proposed that we take a look first at the feed yard. It turned out to be an entire complex of facilities for the storage of the required supply of forage.

The feed yard has been in operation at the farm for more than one year. In modernizing the old farms, the leaders devoted thought first of all to the feed base, they selected the most efficient plans and they were assisted in implementing these plans by patron-metallurgists.

Economic executives from other regions have learned a great deal from such examples in this oblast. It bears mentioning that specialists have come here from the competing Kurgan Oblast. True, the neighbors have benefited little from the experience. Only 30 percent of their silage and haylage is being stored in a reliable manner -- one of the lowest indicators in the republic. Here the plans call for this situation to be corrected.

How will they carry out the plan? The deputy chief of the oblast agricultural administration N.S. Panikarovskiy mentions the contractors. There are three: Kurgant'yazhstroy, Kurgansel'stroy and Mezhholkhozstroyob'yedineniye. And in the case of all three, only miserly use has been made of the available resources.

"Indeed, the entire summer still lies ahead and they are promising to make them operational by the first of September."

Last year the last-mentioned of the contractors was also full of promises and still the plan was not fulfilled. Is it not possible that this same history will repeat itself again this year? And this again will mean that many tons of silage and hay will be ruined as a result of poor storage.

We would remind N.S. Panikarovskiy of the picture which has been observed in the autumn on more than one farm -- the ricks stood under splendid green caps. They had taken root under a downpour of a feed mixture. It is a fortunate master who has only such a "cap" to throw over the fruits of his labor!

At the same time, there are farms and entire rayons in Kurgan Oblast where concern is being displayed for the feed. Recently the Iskra Kolkhoz in Almenevskiy Rayon fulfilled its 6-month plan for the sale of milk ahead of schedule and undertook additional obligations. Success did not come easy for the livestock breeders. The well known machine operator V. Krivorotov, who obtained a record yield of root crops, works here in the Urals. Storehouses were built for these crops at the kolkhoz.

Several years ago, one of the rayons -- Yurgamyshskiy -- initiated a new slogan: a reliable roof for the feed. A truly great amount of work was carried out! Today these examples are being juggled about in the administration, so as to avoid having to discuss those farms where more than one half of the feed is perishing.

#### According To Their Own Plan

At the Omskoye Experimental-Production Farm, while the spring-field operations were in full swing, we encountered machine operators G. Pavlov and V. Korpan at the central farmstead. They were concentrating their attention on mechanisms, testing and changing them. It turned out that they were reconstructing a vitamin grass meal unit.

We wished to know how they were streamlining operations. The authors explained that they were employing the method of Sakhalin Oblast, where nature does not indulge the farmers.



"We decided to expand the range of responsibilities of the AVM /vitamin grass meal unit/" stated the director of the OPKh /experimental model farm/ A.M. Podgurskiy, "to use the unit not only for preparing vitamin grass meal and chop but also for the laying in of haylage. Such a technology made it possible to raise by twofold the carotene content in it. The productivity of the unit has also been increased."

On many Omsk farms, one encounters mechanisms and storehouses which are well known. However, the Siberians do not adopt any innovations mechanically. They necessarily seek out their own more profitable variant. There are more than 100 vitamin meal units in operation in the oblast and they are all under roof.

#### Without Additional Expenditures

At first glance, these installations do not appear to be sufficiently reliable. Rather than new posts, the ones in use were employed earlier in industry.

When we were in Aksayskiy Rayon in Rostov Oblast, we sought the opinion of the livestock breeders and they joked: if the cows are satisfied, then the storehouses are good. And actually the beets are being stored in a fine manner; there are almost no waste products.

The plan for such storehouses is enjoying great popularity throughout the oblast. At the present time, new storehouses are being built on the farms and existing ones repaired. However, in such rayons as Oblivskiy, Bokovskiy, Proletarskiy and Tarasovskiy, fodder beets are not held in high esteem. Very few are harvested here and no concern is evidenced for their storage.

The mowing of grasses is in full swing and at the present time all efforts in a number of oblasts all efforts are being directed towards the construction of a particular type of installation -- silage trenches -- with the coarse feed again remaining outdoors. Moreover, some economic executives are convinced that a roof offers no advantage for hay. The experience of Leningrad workers in the forced drying of hay and its skilful storage is being adopted successfully in Vologda Oblast and in the Tatar, Mordovian and Mary autonomous republics, while in western Siberia very few mow storage facilities are under construction.

For the republic as a whole, an increase has taken place in the rates for employing funds for the erection of feed production installations. At the same time, the builders are working in a slow manner precisely in those areas where there is an acute shortage of storehouses for silage, haylage and root crops: including at Kurgan, Kirov, Novgorod, Perm and Krasnoyarsk. For example, the Ul'yanovsksel'stroy Trust must turn over three silage-haylage trenches for 5,000 cubic meters to the Proletariy Sovkhoz in Inzenskiy Rayon and as yet it has not even commenced this work. A similar situation prevails in Baryshskiy Rayon. Meanwhile the oblast agroindustrial associations are displaying no undue concern over the indifference of the builders, preferring instead to set their hopes upon a long summer.

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## LIVESTOCK FEED PROCUREMENT

### STATUS OF UZBEK FEED CROP HARVESTING DETAILED

Tashkent PRAVDA VOSTOKA in Russian 5 Jul 84 p 1

/Article: "Feed Procurement -- A Matter of General Concern"

/Text: A majority of the republic's kolkhozes and sovkhoses have completed their second cutting and many farms in Surkhan-Daryan, Kashka-Darya and Tashkent oblasts have commenced their third cutting of alfalfa

According to the situation on 1 July, the kolkhozes and state farms in Surkhan-Darya and Tashkent oblasts had fulfilled their task for procuring coarse feed by 34-37 percent and had laid away 5-5.5 quintals of feed units per standard head of cattle.

Some alarm is being aroused over the status of the grass harvesting and feed procurement work being carried out on farms in Bukhara, Navoi, Dzhizak and Khorezm oblasts, which fulfilled their task for procuring coarse feed by only 11-20 percent. More farms fell behind in the Kara-Kalpak ASSR, where only 57,000 tons of coarse feed were procured -- 8 percent of the task and only 1.1 quintal per standard head of cattle, against a requirement calling for 17.3 quintals.

The rates of growth for feed procurements are low in a majority of the oblasts -- 2-3 percent of the task over the course of a week's time. The chief reason -- slow harvesting of the alfalfa, untimely watering, which led to a considerable lengthening of the between-cutting period, reduced cropping power and a deterioration in the quality of the alfalfa hay.

In Fergana Oblast the first cutting lasted for approximately 1 month and on farms in Samarkand Oblast -- 35 days; the second cutting was started 15 days later and it still has not been completed. The kolkhozes and sovkhoses in Andizhan, Syr-Darya, Bukhara and a number of other oblasts and in many rayons are requiring up to 18-20 days or more for carrying out their second cutting. As of the present time, up to 30-50 percent of the alfalfa areas have not been cut down in Bulungurskiy, Bol'shevistskiy, Samarkandskiy, Dzhalskudunskiy, Bozskiy and many other rayon in Khorezm Oblast and in the Kara-Kalpak ASSR. Such rates are very likely to prevent the fulfillment of the socialist obligations for procuring coarse feed. Time will not wait. Additional measures must be undertaken if animal husbandry is to be supplied fully with rich feed. Severe conditions have developed in a number of rayons throughout the republic

and a strong requirement exists here for resourcefulness. The harvest equipment and human resources must be utilized in a highly productive manner and each day must be used for creating a supply of feed, harvesting the alfalfa as rapidly as possible, procuring coarse-stalk grasses and gathering in the straw without losses.

The majority of the AVM /forced ventilation machine/ units are lying idle and as yet the production of vitamin-grass meal has still not been organized on farms in the Kara-Kalpak ASSR or in Andizhan, Kashka-Darya, Navoi, Syr-Darya and Khorezm oblasts, which fulfilled their plan for preparing this valuable feed by only 1-4 percent. For example, of 26 units in the Kara-Kalpak ASSR, only seven are in operation, in Dzhizak Oblast -- 2 of 19, Kashka-Darya Oblast -- 3 of 19 and in Khorezm Oblast -- 2 of 15. Many units are also lying idle or have not been placed in operation in other oblasts of the republic. All of the units must be installed on an urgent basis and operated continuously. The organs of the ministries of agriculture and the fruit and vegetable industry of the Uzbek SSR, Goskomsel'khoztekhnika and the RAPO /rayon agroindustrial association/ must establish strict control over the operation of each unit, in the interest of fulfilling the obligation -- the production of 187,000 tons of fine quality vitamin meal.

The time is approaching for carrying out ensiling work. However, on a majority of the farms the silage storehouses have still not been prepared and the repair of the corn harvesting equipment not yet completed. This year a large portion of the corn was sown for grain purposes. Special importance is being attached to harvesting and ensiling the corn stalks in a timely manner. This imposes a special responsibility upon the machine operators and farm specialists and leaders. Coarse corn stalks having a lowered moisture content must be ensiled with an additive of more succulent silage bulk, it must be dampened and use must be made of carbamide. Training must be provided for the personnel and seminars must be conducted for the purpose of acquainting the personnel with the ensiling technology.

A large feed reserve is that of retaining its nutritional value. This is achieved through correct storage. Unfortunately, on many farms proper attention is not being given to the problem of retaining the nutritional qualities in feed. Concern must be displayed now for the proper preservation and storage of the feed, recalling that poor storage causes the nutritional value of hay to fall by 10-15 percent. The feed must be accounted for in the correct manner. A loss of 938 tons -- 24 percent of the feed -- was recorded on nine farms in Alatskiy Rayon. Such incidents must be condemned in a very strict manner.

Deserving of serious attention is the fact that many farms, in addition to harvesting grain crops from watered lands, have commenced the repeated sowing of corn and other forage crops. This tremendous reserve for increasing the production of feed must be employed more extensively at all kolkhozes and sovkhoses.

The party, soviet and agricultural organs must undertake additional measures aimed at accelerating the feed procurement rates and raising the responsibility of the RAPO and farm leaders with regard to carrying out their feed production obligations.

## LIVESTOCK

### LIVESTOCK SECTOR INTERFARM RELATIONS EXAMINED

Alma-Ata SEL'SKOYE KHOZYAYSTVO KAZAKHSTANA in Russian No 5, May 84 pp 28-29

[Article by A. Abdrazakova, candidate of economic sciences; T. Dzhakulov, candidate of economic sciences, honored economist of the Kazakh SSR; and U. Galiyeva, economist: "Improving Interfarm Cooperation"]

[Text] One of the areas for increasing the effectiveness of agricultural production is the development of specialization and concentration on the basis of interfarm cooperation. This creates conditions for the introduction of industrial technology, the application of highly effective machines, comprehensive mechanization, scientific organization of labor and a higher art of production.

The republic has more than 160 specialized farms for completing the raising and fattening of cattle. The farms have 6 million hectares of agricultural land assigned to them. They can accommodate 669,000 cattle.

In 1981 they sold more than 400,000 head of cattle. The weight of each young male animal released from fattening exceeded 420 kilograms.

Production relations between the specialized farms and the sovkhoses that deliver young animals for fattening -- the participating farms -- are carried out on a contractual basis.

A specialized farm has an average of 2,500-4,000 head of cattle. On certain specialized farms the level of concentration reaches 8,000-10,000 animals. These include the Chkalovskiy and Zerendinskiy in Kokchetav Oblast, the Burundayskiy and Talgarskiy in Alma-Ata Oblast and the Yermentauskiy in Tselinograd Oblast. Meat production is more efficient on them. Thus in the Yermentauskiy specialized farm, which annually sells 36,000-38,000 quintals of beef, the level of profitability of production is 38 percent and a young animal's weight reaches 500 kilograms. Labor productivity is also higher here.

The Burundayskiy specialized farm is operating efficiently. In 1981 it fattened and sold 8,087 head of young cattle weighing an average of 403 kilograms, which were credited for the fulfillment of the plans of the farms participating in the cooperation. The average daily weight gain amounted to

616 grams, labor expenditures per quintal of weight gain were 13 man-hours, feed expenditures were 11.9 quintals of feed units, and the level of profitability of beef production was 14.9 percent.

The specialized farms have achieved greater production efficiency than the nonspecialized farms have. Labor expenditures on the former are 43 percent of those on the sovkhozes, feed expenditures are 40 percent less, and the level of profitability is considerably higher.

But along with the achievements in the development of specialization and concentration there are also shortcomings and unsolved problems which impede the development of this process and do not provide for effective operation of the entire formation.

An analysis of the activity of the specialized farms showed that expenditures of money and labor are high on them. The cost of a quintal of weight gain in 1981 was 229 rubles, labor expenditures -- 20.7 man-hours, and feed expenditures -- 14.4 quintals of feed units. On individual specialized farms the cost of a quintal of weight gain reaches 350 rubles. Even in places where the cattle are fattened exclusively on scraps from the beet sugar and alcohol industries it was 176 rubles. Such low production efficiency on the specialized farms is the result of the insignificant productivity of the cattle that are being fattened: the average daily weight gain is in the range of 180-490 grams. But they send to the meat combines male calves weighing 420-460 kilograms. The results seem to be fairly good. But in order to achieve them they prolong the time periods for completing the raising and fattening of the animals. On the majority of farms the time period for this kind of maintenance is 18-22 months, and on individual farms it is even more. Moreover the young animals come to the specialized farms with a delivery weight of 180-220 kilograms, which corresponds to approximately 10-14 months of age. Consequently, the animals are released for meat when they are already 2.5 years old. Naturally, not all the expenditures on weight gain are recouped by the yield of products -- this is very expensive weight gain. On the specialized farms where the animals are kept much too long on fattening the expenditure of feeds per quintal of weight gain is 20-25 quintals of feed units.

Because of prolonging the time periods for completing the raising and fattening the animals, the specialized farms fail to fulfill their plans for receiving animals from the other farms that are participating in the cooperation. On the Volodarskiy, Valikhanovskiy and Dzhamentuzskiy specialized farms in Kokchetav Oblast in 1981 these plans were fulfilled by only 60-70 percent. Here the average daily weight gain does not exceed 300 grams. The production cost of a quintal of weight gain reaches 264 rubles.

The results of the activity of the specialized farms show that factors that impeded the development of interfarm cooperation are still alive. They include, above all, the weak feed base. Initially it was intended that the feed resources of interfarm enterprises would be comprised of feeds from their own production and those coming in from the participating farms. But this did not work out in practice. As a rule, the participating farms do not deliver the necessary quantity of feeds.



And another thing. On many specialized farms the existing land is not fully utilized for the production of their own feeds, which impedes the solution to this problem. Each specialized farm has an average of from 3,000 to 29,000 hectares of planted area. But the structure of these areas does not correspond to the production direction of the farms, since grain crops comprise 60 percent here. And large areas are devoted to wheat. At the same time the specialized farms purchase feeds from the participating farms. The high cost of purchased feeds and their low nutritive value increase the cost of weight gain. For example, the Ruzayevskiy, Kuybyshevskiy, and Krasnoarmeyskiy specialized farms in Kokchetav Oblast purchase from participating farms up to 25 percent of their silage, 20-25 percent of their straw and 11-15 percent of their concentrated feeds.

On the specialized farms of East Kazakhstan Oblast feed crops comprise only 15-20 percent in the structure of the planted areas, and on the Zhdanovskiy specialized farm, where the average annual number of head of cattle being fattened is about 5,000, only 2,300 hectares are planted in feed crops.

It is obvious that in order to solve the problem it is necessary to change the structure of the planted areas, maximally increasing the amount of land planted in feed and grain forage crops. Moreover, feed production must be separated out into a specialized branch on the specialized farms.

Interfarm cooperation and the organization of specialized farms for completing the raising and fattening young animals require solutions to a whole number of production problems. Among them are continuous supply of the specialized farms with young animals in order to have uniform work throughout the course of the year, assigning farms for the delivery of young animals, and strict observance of the age and weight conditions of the animals. To do this it is necessary to increase the responsibility of the participating farms for the organization of the reproduction and preparation of young animals which are in good condition. In order to provide for rhythmic operation of the farms and to increase the effectiveness of beef production, it is necessary to implement a whole series of organizational and economic measures which would regulate cattle raising on the participating farms according to a unified plan and would increase the responsibility of their managers for the delivery of young animals to their partners.

One must not forget that the effectiveness of the completion of the raising and fattening of young animals on specialized farms depends largely on how the raising of these animals is organized on the participating farms. For young cattle it is necessary to have better conditions for feeding and maintenance during the first months of their lives. When they are underfed at an early age their growth and development is retarded. And this, in the final analysis, has an effect on future results.

With interfarm cooperation in the process of production activity the specialized farms enter into certain production and economic relations and mutual accounts with the participating farms. With mutual accounts based on principles of buying and selling, the participating farms sell the young

animals to the specialized farms at calculated prices which are established taking the weight categories into account.

But no attention is paid to the age of the animals. The specialized farms receive animals whose live weight does not meet the requirements of the corresponding age. Thus male animals with a live weight of 160-180 kilograms correspond to an age of 7-8 months, but animals which are 11-12 months of age and older arrive weighing this much, which causes considerable nonproductive expenditures of feeds during subsequent completion of raising and fattening, and thus predetermines that they will be kept too long. Such animals lose their potential possibilities of intensive growth.

It is known that the expenditure of feed per unit of weight gain depends to a considerable degree on the age of the animals and the intensiveness of feeding. With age, and the reduced intensiveness of growth, the expenditure of feeds per kilogram of weight gain increases. With an increase in the period of fattening, the expenditure of feeds per kilogram of weight gain for the full cycle of raising and fattening also increases considerably. Consequently, the calculated prices should be set not only for the live weight, but also taking into account the age of the young animal that is delivered, that is, the prices should be differentiated depending on the young animal's age and weight. And if the young animal is delivered weighing less than 180-200 kilograms at an age of more than 12 months, the payment should be made at procurement prices since until its weight is increased to 450 kilograms it is impossible to receive the price increment which is paid only for young animals.

Establishing prices for young animals taking into account their age and weight will increase the responsibility of the participating farms for straightening out accounts and will stimulate the organization of a more intensive level of production, the provision of high weight gains, a reduction of the time periods for raising young animals, and their prompt release to the specialized farms.

In order to strengthen the ties among all participants in the cooperation, it is necessary to regulate the organization of their production according to a unified plan. Moreover, the managers and specialists of the participating farms should bear responsibility for the delivery of young animals to the specialized farm at the level of fulfillment of the state national economic plan. In all cases it is expedient to transfer the young animals to the specialized farms for the completion of raising and fattening at an early age: in dairy cattle raising -- 15-20 days or 3-4 months, and meat cattle raising -- 5-6 months.

But up to this point in the majority of cases the plan for the delivery of meat is given to the farms that supply the young animals. It would seem that in order to make sure that the specialized farms are responsible in the organization of the completion of raising and fattening young animals and to increase the effectiveness of beef production, the plan could be given to them, and the supplier farms could be given a plan for the sale of young animals of a particular age and weight to the specialized farm.



In a word, there are many problems. There is no doubt that their solution requires a serious, thoughtful approach on the part of managers of agro-industrial associations.

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## REGIONAL DEVELOPMENT

### MOLDAVIAN KOLKHOZ CONGRESS REVIEWS AGRICULTURAL DEVELOPMENT

Kishinev SOVETSKAYA MOLDAVIYA in Russian 24 May 84 pp 1-3

/Article: "In Coordination With the Leninist Cooperative Plan"

/Text/ The kolkhoz peasantry of Moldavia is successfully implementing the party's program for the further intensification of agricultural production and for improving the system of economic management and the entire administrative mechanism. In creatively developing the principal conditions of the Leninist cooperative plan and the principles of socialist management, it is actively participating in the development of the agroindustrial potential of the republic and in carrying out the tasks assigned by the 26th party congress and subsequent plenums of the CPSU Central Committee.

During the period following the 3d Congress of Kolkhoz Members, the role played by the kolkhoz councils was raised considerably. Relying upon economic levers, these democratic organs of administration ensured a further increase in the operational efficiency of kolkhozes and inter-farm formations and they attached a higher degree of socialization to the kolkhoz-cooperative form of ownership. This in turn made it possible to intensify the processes associated with the division of labor and production specialization and concentration, to accelerate the conversion of agriculture over to an industrial basis and to solve the social problems of the rural areas in a more successful manner.

On 23 March, approximately 1,200 delegates elected at rayon conferences of kolkhoz members gathered together at the 4th Congress of Kolkhoz Members.

Following the election of the mandate and editorial committee and the secretariat of the congress, the following agenda was approved:

1. The report by the Kolkhoz Council of the Moldavian SSR and the tasks of the kolkhozes, inter-farm associations and enterprises, resulting from the decisions handed down during the 26th CPSU Congress and subsequent plenums of the CPSU Central Committee.
2. Report by the Auditing Committee of the Kolkhoz Council of the Moldavian SSR.
3. Elections of the Kolkhoz Council of the Moldavian SSR.
4. Elections of the Auditing Committee of the Kolkhoz Council of the Moldavian SSR.

The chairman of the Kolkhoz Council of the Moldavian SSR, V.A. Ryabchich, delivered a report concerning Item 1 of the agenda.

"The high grade assigned to the work of the kolkhozes, inter-farm associations and enterprises in developing agricultural production during the period following the republic's 3d Congress of Kolkhoz Members, which was furnished in the welcoming speech of the Central Committee of the Communist Party of Moldavia, the Presidium of the Supreme Soviet and the Council of Ministers of the Moldavian SSR" he stated, "testifies to the fact that the Central Committee of the Communist Party of Moldavia and the government of the republic are displaying constant concern for the agricultural workers and devoting increased attention to the problems concerned with further strengthening the kolkhoz system, expanding and reinforcing inter-farm production relationships, improving the organizational forms and the administration of agricultural production and converting it over to an industrial basis.

During the operational period of the kolkhoz councils, large industrial type specialized inter-farm enterprises and associations were created in animal husbandry, feed production and horticulture, the efficiency of branch management in which is considerably higher than that for kolkhozes. The concentration of the machine-tractor pool in inter-farm associations for mechanization has made it possible not only to introduce industrial technologies into field crop husbandry in a more successful manner, but also to raise the effectiveness of equipment usage and to create equal conditions for production by all farms -- participants in cooperation.

As a result and compared to the corresponding period for past years, the gross agricultural output increased by a factor of almost 1.5, including 60 percent for animal husbandry products. Grain production increased by a factor of 1.3, tobacco -- by 1.6, vegetables -- by twofold, fruit -- by 1.8 and meat and milk -- by a factor of 1.7. The entire increase in output was obtained mainly as a result of raised cropping power for the agricultural crops and increased productivity for animal husbandry. The kolkhoz economies were strengthened noticeably. Net income was increased by 60 percent. The material and cultural standard of living for kolkhoz members and workers attached to inter-farm enterprises was raised.

The years which have elapsed since the 3d Congress of Kolkhoz Members have been characterized by further development of the productive forces and by the industrialization of agricultural production. The production potential has increased considerably, an expansion has taken place in the scale of housing and cultural-domestic construction and the material well-being of rural workers has improved.

During this period, 1.5 billion rubles worth of capital investments were set aside for developing the logistical base for agriculture. Compared to 1978, the fixed productive capital of an agricultural nature increased by 23 percent and reached 3.2 billion rubles. The power engineering capabilities increased by a factor of 1.4 and the power-worker ratio -- by a factor of 1.7.

As a result of the production potential that has been created, the improvements in the expertise of the personnel and the strengthening of labor, production

and technological discipline, the gross output volume of farming and animal husbandry last year surpassed the level achieved 5 years ago by 18 percent. The efficiency of agricultural production was raised. Compared to the previous five-year period, profits in this sector increased by 48 percent.

The fact that the course selected is the correct one was borne out in particular by last year's extremely unfavorable weather conditions, when the farms in the kolkhoz-cooperative sector not only did not suffer a reduction in production, but in fact realized an increase in production growth of 5.5 percent compared to 1982. A net income of 577 million rubles was realized, or 38,500 rubles per 100 hectares of agricultural land and this surpasses the 1980 level by a factor of almost four. Considerably greater quantities of tobacco, sunflowers, sugar beets, fruit, potatoes, melon crops, milk, meat and eggs were produced and sold to the state.

Jointly with the professional trade union organizations, a great amount of work was carried out aimed at solving the social problems in the rural areas. Over the past 5-year period, the wages of kolkhoz members increased by 34 percent. More than 170 million rubles worth of capital investments -- 17 percent more than the amount for the previous five-year plan -- were made available for the construction of installations of a cultural-domestic nature. Roughly 307,000 square meters of housing space were made available in the rural areas, an expansion took place in the network of clubs and palaces of culture, children's pre-school institutes, schools, libraries, athletic installations, stores and domestic services enterprises and two inter-kolkhoz sanatoriums and ten young pioneer camps were placed in operation.

At the same time, Comrade Ryabchich further stated that substantial shortcomings are still being noted in the work of the kolkhoz council, its presidium, the rayon kolkhoz councils and farms. Some of them have failed to reorganize the style and methods of their work in light of the requirements handed down during the November (1982) and subsequent plenums of the CPSU Central Committee and this was the chief reason for non-fulfillment of the production plans for agricultural output. During 3 years of this current five-year plan alone, the shortfall in such output amounted to almost 900 million rubles worth.

An analysis of the reasons for farms in Teleneshtskiy, Dondyushanskiy, Sorokskiy and Glodyanskiy rayons falling behind in their operations, for example, reveals that a very strong role was played by a low level of economic management. At many kolkhozes the measures aimed at intensifying production and raising its efficiency are not being implemented in a sufficiently active manner, scientific achievements, leading experience and progressive forms for organizing labor are being introduced into operations in a weak manner and only a low degree of exactingness is being applied in the case of individuals who violate planning and state discipline.

Subsequently the speaker touched upon the problems of grain production. He noted in particular that as a result of purposeful work aimed at raising the level of logistical equipping, the use of chemical processes and land reclamation, the introduction of new varieties and hybrids and improvements in the structure of the areas under crops, substantial changes have taken place in

recent years throughout the republic in the system for managing the grain economy, with the system becoming more stable in nature. The general use of industrial technologies for cultivating crops has become a typical feature throughout the branch. Work has commenced on irrigated lands aimed at cultivating programmed yields.

It is known that the past few years have been complicated ones for the grain growers: prolonged drought conditions were experienced during three of the last five years. Despite this fact however, 32 quintals of grain were obtained from each hectare and this corresponded to the level for the preceding five-year plan.

The best results were achieved by the kolkhozes and inter-farm associations in Brichanskiy, Yedinetskiy, Drokiyevskiy and Oknitskiy rayons, where the average yield was 35-38 quintals.

The industrial technology for corn cultivation offers great prospects for increasing the grain yields. During the period in which it was introduced, the increase in yield amounted to 12.4 quintals per hectare and compared to the conventional technology labor expenditures were reduced by one third. Last year, under conditions involving a deficit of moisture, a fine yield of corn grain was obtained from each hectare and at kolkhozes in Brichanskiy, Yedinetskiy and Oknitskiy rayons -- 55-67 quintals.

However, according to Comrade Ryabchich, notwithstanding certain achievements in development of the grain economy, during 3 years of the current five-year plan the kolkhozes and inter-farm associations produced less grain than planned by almost 1.7 million tons. The result expected from the introduction of the industrial technology was not achieved. It was precisely for this reason that during the current five-year plan, in Bessarabskiy, Kaushanskiy, Leovskiy, Rezinskiy, Sorokskiy and Teleneshtskiy rayons, a reduction in cropping power of 6-9 quintals was tolerated and the production plans were fulfilled by only 60-63 percent.

Just as in the past, the cropping power differs not only throughout the republic as a whole, but also between farms within the same rayon. Thus, during 3 years of the five-year plan the XIX S'yzd KPSS Kolkhoz in Brichanskiy Rayon obtained an average of 46.4 quintals of grain, while the neighboring Krasnoye Znamya Kolkhoz, which has excellent land at its disposal in terms of the index for quality and yield, obtained only 30.9 quintals.

Great losses in cultivated crops are being tolerated. The harvesting machines, which are available in adequate quantities, are not being utilized in a productive manner. The harvesting of cereal grain crops lasts from 15 to 25 days and corn -- from 30-40 work days and this exceeds by twofold the optimum periods. Improvements must also be carried out in the use of fertilizers and other chemical means, the grain crop areas on irrigated land must be expanded, the structure of the area under crops must be made to conform with the recommendations in a more rapid manner, the sowings of peas and winter barley must be expanded and crop rotation plans must be introduced into operations and adhered to in a very strict manner.



Subsequently the speaker described in detail the status of affairs in the production of technical crops. He noted that during the years of the current five-year plan the cropping power of sugar beets decreased compared to the previous five-year plan and that an increase has taken place in the number of farms obtaining less than 200 quintals of roots per hectare. The branch is being operated at a very low level on farms in Rezinskiy, Kamenskiy and Dondyushanskiy rayons, where the cropping power amounted to only 155-185 quintals. The principal reasons for the shortfall in beets -- unsatisfactory work in connection with forming the density of the plants and combating weeds during the second half of the growing season and also tremendous losses during the harvest period.

According to the speaker, positive improvements have recently been noted in the production of sunflowers. On the average for the years of the current five-year plan, the sunflower cropping power increased by 1.5 quintals per hectare and last year reached almost 20 quintals. This made it possible to fulfill the annual plan for selling oil-bearing seed to the state by 103 percent, to sell 11,000 additional tons and to issue a portion of the oil to the kolkhoz members in the form of payments in kind. In raising the cropping power of the sunflowers, an important role was played by the introduction of the industrial technology and also new and highly productive varieties and hybrids.

The initiators of corn cultivation on an industrial basis -- the Glodyany farmers -- during the years of the current five-year plan and compared to the Tenth Five-Year Plan, increased the production of oil-bearing seed by 30 percent and obtained 28 quintals of this seed per hectare.

However, this is still only the beginning. On the whole, the status of affairs with regard to the production of sunflowers remains unsatisfactory. The plans for the production and sale of oil-bearing seed during 3 years of the five-year plan were not fulfilled. The slow introduction into operations of the experience accumulated throughout the republic in obtaining high yields and failure to observe the basic technological requirements and optimum harvesting periods produced a situation wherein, in Kutuzovskiy, Leovskiy, Grigoriopolskiy, Nisporenskiy, Orgeyevskiy, Rezinskiy and other rayons, the cropping power for the oil-bearing seed in recent years has not exceeded 13-15 quintals per hectare. In order to put an end to such practice, it will be necessary to introduce the industrial technology in a more rapid manner, create mechanized detachments and teams in all areas and convert them over to collective contracts.

Comrade Ryabchich emphasized that vegetable production has undergone further development, that work has continued with regard to production concentration and farm specialization in the Dnestr River zone of irrigation and that the branch's logistical base has been strengthened. During the five-year period, the yield of garden products increased by 19 percent and on specialized farms -- by 27 percent. The hotbed and hothouse economy was expanded by 2 million square meters and an increase took place in the proportion of hothouse vegetables. This made it possible to increase by twofold the sale of early products and to raise the efficiency of vegetable production.

The industrial technology for cultivating tomatoes is being employed extensively. Last year the industrial plantations occupied 6,000 hectares -- one third of the area allocated for this crop. In all, more than one third



of the gross yield of tomatoes was obtained here, with a cropping power of 350-400 quintals per hectare.

At the same time, during 3 years of the five-year plan the indebtedness to the state amounted to 70,000 tons of vegetables. From year to year, the tasks with regard to the vegetable assortment are not being carried out. In order to expand further the production of garden products, it will be necessary to make greater use of the experience of leading farms, to raise the return from an irrigated hectare and to devote greater attention to the quality of the work being performed and to the introduction of efficient forms for labor organization and wages.

Thereafter the speaker paused to discuss the problems concerned with the development of horticulture and viniculture. He stated that the chief trend in the work of the kolkhoz councils and individual farms has been the implementation of the program developed by the party for further intensification, concentration and specialization in these traditional branches of the republic and improving their technical equipping and industrial technologies.

In horticulture a planned conversion is being carried out over to plantings of the intensive type. Industrial plantations have been created on 35,000 hectares. Today plantings of the intensive type occupy 40 percent of the structure of fruit plantings. At the beginning of this five-year plan alone, the gross yield of fruit in inter-kolkhoz orchards increased threefold and reached 170,000 tons last year. Occupying 22 percent of the fruit bearing area, they furnished 35 percent of the gross production of fruit.

Nevertheless, there are serious shortcomings in the development of horticulture, as a result of which the plans for producing and selling fruit are not being fulfilled and the increase in cropping power remains low and amounts to only 9 quintals per hectare. The development of the production base for new plantings is lagging considerably behind the planting rates. This work is not receiving the proper support in the form of equipment and containers. The problems concerned with mechanizing the harvest work are being resolved very slowly and this is resulting in partial losses in the crops.

One of the most important trends in the agrarian policies of the Communist Party of the Soviet Union quite properly is that of converting over to extensive mechanization and electrification of agricultural production and to the use of industrial technologies, land reclamation and chemical processes. Such was the opinion expressed by the speaker. A considerable portion of the technical equipment is being utilized successfully throughout the republic on an inter-farm basis. This has made it possible to raise the level of technical servicing for the machines, the quality of the repair work, to ensure a high state of readiness for the equipment, to improve working conditions considerably and to raise the prestige of the profession of machine operator.

At the present time, the equipment is for the most part being operated by large mechanized detachments and this is making it possible to improve considerably the use of labor and material resources. The associations for mechanization have brought about a reduction in labor expenditures by an average of 20 percent for the five-year period for the raising of agricultural products.

However, in those rayons where as yet no determination has been made as to the organizational structure for these formations and solutions are being found only slowly for the problems concerned with creating their logistical base and the cultural-domestic conditions required for the machine operators, a great amount of personnel turnover is being observed, poor use is being made of the equipment and excessive amounts of resources are being used for the operation of this equipment and this is resulting in a drop in production efficiency. This applies first of all to the mechanization associations of the Leovskiy, Teleneshtskiy and Kotovskiy rayon kolkhoz councils.

An analysis of the operational shortcomings of these and a number of other associations reveals that they derive not from the inter-farm form for organizing use of the machines but rather from the absence of coordination in the work being performed by the farms -- participants in cooperation. Many kolkhoz leaders, instead of furnishing assistance, participate together in the overall work and quite often respond to the associations in a parasitical manner. A requirement exists in this regard for improving the style and methods for managing the associations, eliminating existing shortcomings and strengthening and raising the level of their operations in an organized manner.

Subsequently, Comrade Ryabchich analyzed in detail the work of the land reclamation associations and services created on an inter-farm basis and he emphasized the need for sharply improving the use of irrigated lands. He maintained that those who work on irrigated tracts must display a greater degree of responsibility. Someone must be held responsible for each hectare of irrigated land, cost accounting procedures must be introduced into operations in all areas, interest must be displayed in the final results and these final results must be coordinated with the programming of cropping power. The watering of non-irrigated lands must be carried out on a more extensive scale, the work directed towards systematically raising the fertility of soils must be accelerated and efficient use must be made of all plant protective agents, mineral and organic fertilizers and herbicides.

The speaker devoted a great amount of attention to those problems associated with the further development of animal husbandry. The processes of specialization and concentration based upon inter-farm cooperation are being employed on an extensive scale in this branch. A large industrial base has been created, with more than 800 million rubles being allocated for its development. The use of an industrial technology at the complexes has made it possible to make better use of the feed resources, to raise labor productivity and to achieve a reduction in output production costs.

Compared to the previous year, the sale of meat to the state last year increased by 8 percent, milk -- by 19 and eggs -- by 13 percent. Farms subordinate to the Brichanskiy Rayon Kolkhoz Council serve as an example of efficient management of this branch. During 3 years of the five-year plan, these farms fulfilled their production plans for all types of animal husbandry products.

At the same time, measures are not being undertaken in individual rayons and on many farms with regard to overcoming the lag that has developed in the development of animal husbandry. The feed base remains weak and the productivity of the livestock -- low. The capabilities of the beef production complexes are not being utilized to satisfaction. In 1983 they were

undersupplied by 16,000 head. Only 30-50 percent of the capabilities at the Lazovsk, Kantemirskiy, Glodyany, Kotovsk and Kaushany associations of Kolkhozhivprom were mastered.

Just as in the past, the principal shortcomings in the work of industrial livestock enterprises continue to be insufficient support in the form of feed (owing to the fact that many farms -- participants in cooperation -- failed to observe their contractual obligations for feed deliveries) and also violations of technological discipline and a low degree of protection for the animals.

A further increase in meat production must be based upon intensive factors of development. Thus all attention must be concentrated on mastering the production capabilities of inter-farm specialized enterprises, carrying out the modernization of existing and the rapid completion of the construction of new complexes and creating favorable conditions for their rhythmic and highly efficient operations.

The development of dairy animal husbandry during the reporting period was achieved based upon its further intensification, the conversion of farms over to the use of progressive technologies and the breeding of new and highly productive livestock. Inter-farm complexes for the raising of non-calving young cows played a substantial role in improving the quality indicators of the branch. Over the past 5 years, more than 260,000 non-calving young cows were raised for the farms and this made it possible to completely renovate and qualitatively improve the brood stock.

In addition to a certain improvement in the quality of the products and an increase in the purchase prices, this made it possible for dairy animal husbandry to become profitable and to earn 17.5 million rubles worth of profit. However, many rayon kolkhoz councils and farms are not undertaking efficient measures aimed at eliminating the prolonged lag in the development of the branch. The departmental technology for milk production is being introduced into operations only slowly at the dairy farms, collective contracts have been introduced at only 46 of them and the level of complete mechanization still remains low. Machine milking operations are being employed for only 70 percent of the cows and on farms in Rezinskiy, Sholdaneshtskiy, Teleneshtskiy and Lazovskiy rayons -- less than one half.

Modernization work and the installation of civic improvements at the dairy farms must be completed, the level of all-round mechanization must be raised, machine milking of the cows must be introduced into operations in all areas and a complex of measures must be implemented aimed at improving the systems for feeding and feed production. Sheep breeding must also become an object of constant attention for the kolkhoz councils and farm leaders.

In carrying out the decisions handed down by the party and government with regard to strengthening the feed base, the kolkhozes and inter-farm associations have increased noticeably the production of feed and they have improved the quality and structure of the feed. On the average for the past 5 years, the cropping power for the forage crops has increased by 27 percent. Many farms are obtaining stable yields of 60 or more quintals of feed units per hectare.

However, the problems concerned with creating a guaranteed feed base are being solved very slowly. Thus a requirement exists for radically reexamining the organization of all work concerned with the production and processing of forage. Special attention must be given to solving the feed protein problem, mainly by increasing the production of alfalfa, soybeans and other high protein crops and expanding the area of irrigated feed lands.

Comrade Ryabchich emphasized that the kolkhoz builders are making a great contribution towards implementing the Food Program. The creation of a single specialized inter-farm construction organization is serving as a true base for rapid growth in the volumes and improvements in the quality of construction work. During the reporting period, the construction organizations of Kolkhozstroy carried out 660 million rubles worth of construction-installation work. Almost 1,800 installations of a production and cultural-domestic nature were built and placed in operation, or 34 percent more than during the preceding five-year period. A course is being followed aimed at achieving a maximum concentration of resources for the construction of the more important installations. The number of installations under construction simultaneously has in recent years decreased by 40 percent.

More extensive use is being made of progressive forms for organization and wages in construction. Thirty percent of the brigades engaged in carrying out construction-installation work have been converted over to the new form of cost accounting procedures. Nevertheless, the work of the inter-kolkhoz construction organizations is still not fully in keeping with the modern requirements. All of the necessary measures must be undertaken to strengthen planning discipline in capital construction, to ensure more efficient use of capital investments, to improve the planning of installations, to reduce the periods of time required for erecting them, to accelerate the mastering of planned capabilities and to improve the quality and lower the cost of construction operations.

Thereafter the speaker discussed in detail the work of the kolkhoz councils in administering the kolkhoz-cooperative sector. He stated that in recent years the output production volumes have been coordinated more completely with the available logistical and financial resources, the fixed productive capital and the capital investment amounts and that a number of measures have been implemented aimed at improving the organization of accounting and raising its efficiency. This has made it possible to exercise control to ensure more correct utilization of material-monetary resources, to wage a campaign against mismanagement and waste, to uncover reserves and to exert an effective influence on the course of the production processes.

A most important level for further increasing the production of agricultural products and raising the economic efficiency of the branch is that of introducing cost accounting procedures and making the forms for organizing and stimulating labor directly dependent upon the final results. The kolkhoz councils have devoted special attention to the introduction of collective contracts. Last year this progressive form for labor organization and wages was employed by 882 work collectives, or 17 percent of their overall number. Their labor productivity turned out to be two and a half times higher than the average for the republic. This work was carried out in an active manner on farms in Brichanskiy, Drokiyevskiy, Rybnitskiy, Orgeyevskiy and other rayons.



At the same time, some farms are tolerating formalism in the introduction of cost accounting procedures and collective contracts. When determining the estimates, the planning indicators are often used instead of the production norms as recommended. At times the contractual obligations are violated by the farm administrations and mistakes are tolerated in the staffing of the brigades and teams and the principle of voluntarism is not being observed.

Considerable improvements must also take place in the work of organizing accounting and reporting operations on the farms, eliminating incidents of unnecessary additions, eyewash, theft, waste and mismanagement and increasing control over the observance of state price discipline.

The past few years were fruitful but nonetheless difficult ones for the kolkhoz-cooperative sector. As a result of the measures carried out aimed at increasing the rates of growth for and raising the efficiency of social production, the kolkhoz economy was strengthened considerably and an increase took place in the number of highly profitable farms. On the average for the years of the current five-year plan, the profits for the kolkhoz-cooperative sector reached 372 million rubles compared to only 225 million rubles during the Tenth Five-Year Plan. Last year, for the very first time, 577 million rubles worth of such profit was obtained and there were no unprofitable kolkhozes. However, in order to increase still further the efficiency of all operations, the farm leaders, as emphasized during the June (1983) Plenum of the CPSU Central Committee, must remember that in addition to being economic executives they are also organizers of the masses.

The development of independence, initiative and socialist enterprise in administrative personnel should be combined with a high degree of exactingness with respect to them and the level of organizational work should be strengthened at each production level. This was emphasized in particular in the decree of the CPSU Central Committee entitled "The Work of the Central Committee of the Communist Party of Moldavia in Improving the Operational Style and Methods of Party Organizations in Light of the Decisions Handed Down During the November (1982) Plenum of the CPSU Central Committee" and during the 12th Plenum of the Central Committee of the Communist Party of Moldavia, which underscored some substantial shortcomings in the operational style and methods of the kolkhoz council and its presidium.

The kolkhoz councils must draw some serious conclusions and ensure further growth in production and in the economic efficiency of agriculture.

This year the kolkhoz-cooperative sector must increase the production of agricultural products by 7 percent compared to 1983. In order to accomplish this, it will be necessary to continue the introduction of a scientifically sound system of farming, modern technologies and progressive forms for labor organization and wages and place in operation all available reserves for raising the efficiency of production operations. All of the work must be directed towards carrying out the tasks of the fourth year of the five-year plan and also the five-year plan as a whole.

Thereafter a report was delivered by the chairman of the Inspection Committee of the Kolkhoz Council of the Moldavian SSR, M.G. Dumbravan. The latter noted that the documentary inspections of the financial and economic activities of the Kolkhoz Council and its production associations and cost accounting

subunits did not uncover any financial violations during the reporting period. Proper protection was provided for the monetary funds and property and commodity-material values. Monetary funds from Gosbank and the Kolkhoz Council of the Moldavian SSR were expended in a sound manner and for a special purpose. The money obtained from Gosbank was credited completely and in a timely manner. There was no extension of monetary funds or debtor indebtedness beyond the established periods. The overall savings in funds, compared to the estimates for maintaining the staff of the Kolkhoz Council, exceeded 10 percent of that achieved during the past period. It was achieved through systematic work in improving the structure and administrative staff and through the thrifty expenditure of funds for administrative and other purposes.

The Inspection Committee introduced a proposal to recognize the work of the Kolkhoz Council of the Moldavian SSR as being satisfactory.

The chief of the Main Administration for Kolkhoz Affairs of the USSR Ministry of Agriculture and the principal secretary of the union Kolkhoz Council P.I. Zvegintsev was allowed to speak. To the sound of applause from those in attendance, he extended a greeting to the union Kolkhoz Council, the board of the USSR Ministry of Agriculture and to the 4th Congress of Kolkhoz Members of Moldavia. According to this greeting, in carrying out the Food Program the republic's kolkhoz members have achieved a considerable increase in output and they have strengthened the agricultural economy. At the present time, the fixed capital of the kolkhozes and inter-farm formations has reached 3.6 billion rubles. The construction of production installations, housing and municipal enterprises is being carried out in large volumes in all areas. The firm conviction was expressed in the greeting that the kolkhoz members of Moldavia will make a worthy contribution towards carrying out the tasks called for in the country's food program. The participants in a debate expressed their ardent desire to implement the program developed by the party for further improving agriculture and fulfilling the tasks advanced in the decree of the CPSU Central Committee entitled "Work of the Central Committee of the Communist Party of Moldavia in Improving the Operational Style and Methods of the Party Organizations in Light of the Decisions Handed Down During the November (1982) Plenum of the CPSU Central Committee." They analyzed the results achieved from the standpoint of high exactingness and they uncovered shortcomings hindering more rapid rates for developing this vitally important branch of the national economy. The delegates referred to as yet unused reserves for raising the level of intensification of farming and animal husbandry and they pointed out methods for improving inter-farm relationships and further converting agricultural production over to an industrial basis.

"As a result of measures undertaken to improve the style and methods of management, to raise labor and state discipline and to achieve more efficient use of land and the logistical base" stated the chairman of the Drokiyevskiy Rayon Kolkhoz Council I.K. Serbin, "the production of goods in the rayon's kolkhoz-cooperative sector is steadily increasing. Labor productivity has increased by more than 12 percent over the past 5 years. As a result, the net profit realized by the farms has increased by a factor of 1.5."

However, the speaker noted that we are well aware that the production level achieved and its effectiveness are still not in keeping with the level of technical equipping or the potential that has developed. The rayon Kolkhoz



Council has still not achieved a situation wherein the plans and obligations are being fulfilled in a rhythmic manner by all of the farms. One important reserve for accomplishing this is that of eliminating the great differences in cropping power. Among the specific measures which we outlined -- raising the culture of farming, introducing new forms and methods for management. The speaker emphasized the need for improving the creation and operation of kolkhoz capabilities. It is necessary for all of this work -- from preparing the plan to carrying out repairs on the installations -- to be performed by the inter-farm construction associations themselves.

The chairman of the Gigant Kolkhoz in Vulkaneshtskiy Rayon, I.I. Duloglu, using his own farm as an example, revealed the advantages possessed by the kolkhoz members -- the partners in large-scale cooperative production. An inter-farm complex for the raising of non-calving young cows, he emphasized, supplies the kolkhoz with 340-400 such animals annually. This makes it possible to renovate the dairy herd by one third annually. Meanwhile, enterprises for the production of beef and pork are now producing for the farm 80 percent of all meat being sold to the state. The advantages to the farms -- the partners in cooperation -- could be even greater if all of the kolkhozes fulfilled their contractual obligations for the delivery of feed.

At the same time, one delegate noted that improvements are required in the production-economic relationships between the kolkhozes and their partners in the agricultural complex. In accordance with the contractual arrangements with the procurement specialists, for example, the kolkhozes sustain losses owing to the low quality and shortages in packaging materials, needed for shipping fruit and vegetable products in fresh form. It is our opinion that the Ministry of the Fruit and Vegetable Industry should ideally open up packaging points on the farms. During the winter, the members of kolkhozes could work at these points on a contractual basis.

The leader of a mechanized detachment at the Association for Mechanization of the Komratskiy Rayon Kolkhoz Council and deputy to the USSR Supreme Soviet F. Samsi discussed the need for making efficient use of the powerful K-700 and T-150K tractors. The plows and heavy duty harrows ganged with these machines often break down owing to their intensive use and design shortcomings. The idle time of these machines for repair purposes could be reduced through improvements in the supply of spare parts.

According to a machine operator, one reserve for raising production efficiency is that of strengthening interrelationships among all elements of the agroindustrial complex. The quality of the repair work being carried out in specialized departments of Goskomsel'khoztekhnika is extremely low. Moldsel'khozkhimiya is not making full use of its potential. The interest of these organizations alone in the final results would be of assistance in correcting the status of affairs. Improvements are also required in the mechanism for issuing material incentives: farms which grow seed for hybrid sunflowers must not sustain losses. A uniform wage system for machine operators must also be legalized in all areas.

The 1st secretary of the Brichanskiy Rayon Party Committee, L.A. Stadnik, discussed the organizational work by the rayon committee in mobilizing the

agricultural workers to carry out the tasks confronting them. The decisions handed down during the December (1983) Plenum of the CPSU Central Committee concerning an above-plan increase in labor productivity and an additional reduction in production costs are being warmly supported throughout the rayon. In following the example set by leading workers, the workers on many farms in the kolkhoz-cooperative sector have vowed to increase the number of appearances at work by 10 man-days compared to last year and to raise the output per man by 0.1 norm-shift. According to the speaker, this will make it possible to obtain 10 million additional rubles worth of gross output this year.

However, during the past few years the work of accepting and processing the agricultural products has become a bottleneck in the rayon. The existing capabilities are sufficient only for handling the planned amount of products and not the harvest that can be obtained.

The chairman of the Chadyr-Lungskiy Rayon Kolkhoz Council, M.K. Pashaly, cited facts which testify to the development of the farms during the period which has elapsed since the last congress. Increases have taken place in their average capital investments, in the value of the fixed capital and in the power-worker ratio of the kolkhoz members. This made it possible to raise labor productivity by 22 percent, to increase the profitability of the farms by 44 percent and to double their net income.

Subsequently the speaker concentrated attention on the means for eliminating shortcomings in the work of inter-farm associations. The production capabilities for obtaining beef and pork must be mastered in a more rapid manner, a greater return must be realized from the land and improvements must be realized in the use of labor and material resources. Towards this end, a chief concern in the work being performed by specialists attached to the kolkhoz council must be that of organizing the introduction into operations in the various areas of scientific achievements, leading experience and progressive technologies. More work must be carried out in connection with introducing use of the brigade contract method into operations.

Comrade Pashaly recommends that the work performed by the Kolkhoz Council of the Moldavian SSR be recognized as satisfactory.

"The social development of the rural areas is an objective requirement of the times" emphasized T.M. Yevstrat'yev in his speech, a veteran of kolkhoz production at the Kolkhoz imeni Kirov in Dubossarskiy Rayon, "We have problems in this regard which are in need of immediate solutions. Thus, 12 years ago planning documentation was prepared for the installation of a water supply line in the village of Dorotskoye. It is not expected that this construction work will even be completed this year. The Sel'khozvozvosnabzheniye Production Association of the Ministry of Land Reclamation and Water Management for the republic has from year to year failed to carry out its planned work volumes."

A solution must also be found for the problem of rural kommunkhoses /departments of municipal services/, which have practically ceased their activities owing to a shortage of construction materials. Yet the industrial builders are in great need of their assistance. The village needs additional transport vehicles for transporting personnel to their work sites.

The chairman of the Kolkhozstroy Association of the Rybnitskiy Rayon Kolkhoz Council, D.S. Andrusenko, stated that 48 million rubles were spent at installations in the kolkhoz-cooperative sector during the period that has elapsed since the 3d Congress of Kolkhoz Members in the republic. Housing construction has undergone further development. Using its own resources, the association placed 5,000 square meters of housing space in operation.

Each year the collective is fulfilling its tasks for increasing labor productivity and lowering construction costs. Such results are being promoted by several factors: the attention being given to engineering preparations for production, efficient interaction among all subunits and improvements in the skills possessed by the workers.

A considerable volume of work must be carried out this year. Seven million rubles worth of capital investments must be utilized and 6 million rubles worth of fixed capital placed in operation. In the interest of carrying out these plans, maximum use will be made of all available opportunities for improving the operation of equipment, improving the organization of labor at the construction sites and strengthening labor and technological discipline.

The congress elected new staffs for the Kolkhoz Council of the Moldavian SSR and the Inspection Committee of the Kolkhoz Council of the Moldavian SSR.

7026

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## REGIONAL DEVELOPMENT

### AZERBAIJAN ECONOMIC CONFERENCE ASSESSES APK DEVELOPMENT

Baku BAKINSKIY RABOCHIY in Russian 26 May 84 pp 1-2

[Excerpts] On 24 May [1984], in the Club imeni F. E. Dzerzhinskiy, the Azerbaijan CP Central Committee sponsored a republic economic conference on the problems of the agro-industrial complex. The conference considered the results of the [March 1984] all-union economic conference, and the tasks of the party, soviet and economic organs, and of the trade-union and Komsomol organizations, in conjunction with the practical implementation of the principal points and conclusions contained in the speech at the all-union conference by Comrade K. U. Chernenko, the general secretary of the CPSU Central Committee, and in the report by Comrade M. S. Gorbachev, a member of the Politburo and a secretary of the CPSU Central Committee. The following attended the conference: the first secretaries of the party obkoms, gorkoms and raykoms; the chairmen of the soviet ispolkoms; the heads of the republic's ministries and central agencies; the chiefs of the rayon Goskomsel'khoshtekhnika and Azer-sel'khozkhimiya associations, water conservation organs, and oblast and rayon agro-industrial associations; the heads and party secretaries of the large kolkhozes and sovkhozes; the chairmen of the committees of people's control; scientists and economists; senior officials of the Azerbaijan CP Central Committee and the republic's Council of Ministers; the chairmen of the rayon committees of the Trade Union of Farm Workers; the first secretaries of the Komsomol raykoms; the chiefs of the municipal and rayon computer stations; and the editors of the republic, municipal and rayon newspapers.

The conference opened with an address by K. M. Bagirov, the first secretary of the Azerbaijan CP Central Committee.

The purpose of today's economic conference, continued Comrade Bagirov, was to start out from the party's objectives and discuss the timely problems of our work on the Food Program's practical realization, to consider jointly how best to utilize the favorable experience gained in Azerbaijan, and to specify the tasks of the party, soviet and economic organs and scientific institutions in the new stage of implementing the party's resolutions on developing the agro-industrial complex.

It was a known fact that consistent implementation of the measures outlined by the Azerbaijan CP Central Committee for the comprehensive development of agriculture, the immense aid that the CPSU and the Soviet government provided the republic in reinforcing the production assets base of the kolkhozes and

sovkhozes, the intensification of farm production's specialization and concentration, and the better selection, deployment and training of personnel helped the agro-industrial sector to make great gains in the republic's economy. Much had been done for the social development of the villages and to improve the economic and living conditions of the rural population.

At the same time it must be pointed out that in the development of the republic's APK there were considerable unutilized reserves, shortcomings and omissions that were having a negative effect on the further intensification of this branch. We were not yet achieving the necessary return on investments in agriculture. The growing potential of the APK was not being utilized efficiently everywhere. The use of land, of the stock of machinery and mechanisms, fertilizers, feed, etc. required further improvement. In the republic there still were quite a few farms and even individual rayons that were unable to fulfill the plans set for farm production and agricultural procurement. The kolkhozes and sovkhozes were slow in mastering modern technologies, and in the practical application of advanced know-how and of the achievements in science and technology. Mutually advantageous economic relations between the individual branches were not being established, and the struggle for high final results and qualitative indicators was not being stimulated in every link of the APK.

The Azerbaijan CP Central Committee was confident that the involved and comprehensive deliberation today of all the problems associated with the realization of the party's objectives concerning the development of agriculture and the related branches would serve to further strengthen the economic situation of our kolkhozes and sovkhozes and the social development of the villages, and to increase the farm output, deliveries of farm products to the state, and the republic's contribution toward the realization of the country's Food Program.

I. A. Mamedov, a secretary of the Azerbaijan CP Central Committee, presented his report.

After describing the immense importance of the USSR Food Program, he noted that the first results of its implementation had been evaluated on 26 and 27 March, at the All-Union Economic Conference on the Problems of the Agro-Industrial Complex that the CPSU Central Committee had convened. That conference defined the current and long-term tasks of the the party, soviet and economic organs in achieving faster growth rates of farm production and in continuing the decisive changeover of all links within the APK to the intensive factors of growth.

It was the mission of the republic economic conference, continued Comrade Mamedov, to evaluate the progress in fulfilling the measures for solving the economic and social problems of the villages, the further intensification of farm production, and the successful realization of the Food Program.

After the May Plenum of the CPSU Central Committee, the republic's party organization undertook considerable organizing, political-education and ideological work to mobilize the Communists and rural workers for increasing the efficiency of the economy's agricultural sector. In all three years of the 11th Five-Year Plan, the republic successfully fulfilled the plans and socialist pledges for the production and procurement of all basic types of farm products. The share



of our republic in the all-union gross farm output increased, and the economic indicators of the kolkhozes and sovkhoses improved. Labor productivity rose by 21.1 percent, as compared with the 8.7-percent rise envisaged by the plan. The overall level of profitability in agriculture last year was 26.7 percent. The production assets base of the branch was reinforced considerably. The scale increased and the quality improved of the construction of cultural institutions, schools, service and trade enterprises, and health-care facilities in rural areas.

Thanks to the constant concern of the party, of its Leninist Central Committee and Politburo, and of the Soviet government, the republic's agriculture acquired a great economic potential that would permit even higher rates of its growth and the solution of large-scale socioeconomic problems. As emphasized at the all-union economic conference, the task was to use this potential efficiently, and to achieve already this year high profits in all branches of the agro-industrial complex.

The speaker then presented a progress report on the fulfillment of the Azerbaijan SSR's Food Program. In crop production, during 1981-1983 as a whole, the average annual production levels that the Food Program specified for the the 11th Five-Year Plan were achieved in grain, grapes, vegetables, melons and other crops.

Self-complacency, however, was not warranted. The more so because the overall indicators, which on the whole were favorable, still concealed considerable reserves and unutilized opportunities.

In a number of regions, the growth of production in the kolkhozes and sovkhoses was slow. Crop yields on farms with identical natural, climatic and economic conditions often differed. In the final outcome, the unjustifiable variations in the growth rates of labor productivity, in the reduction of production costs and in the return on capital investment affected adversely the efficiency of production. A number of kolhozes and sovkhoses had not yet learned to prudently use machinery, fertilizer, and other material and financial resources; they had not activated the economic key factors of farming. The problem of using land, especially irrigated land, more efficiently and economically was an acute one. There were many unsolved problems in introducing zonal systems of farming and crop rotation systems, for which the republic was justifiably criticized in a leading article in PRAVDA. As a result, average crop yields were rising slowly, and there still were many farms that were not fulfilling their planned production and deliveries for state procurement.

For the party's obkoms, gorkoms, raykoms and primary organizations, the councils of the RAPO's [rayon agro-industrial associations], and the agricultural ministries and central agencies it was essential to analyze the causes of the shortcomings, bottlenecks and unsolved problems in the entire APK and in every worker collective, and to outline and implement measures for changing over to the predominantly intensive factors of economic growth.

The current procurement prices, continued Comrade Mamedov, were encouraging the production and sale to the state of products of high quality and were increasing significantly the farms' incomes. However, this important reserve for

strengthening the farms economically was not being utilized fully. In this context he noted that Bezostaya 1, a strong variety in terms of breadmaking quality, accounted for most of the area sown to wheat in the republic. But the mixing of Bezostaya 1 wheat with other varieties, the farm managers' lack of responsibility in making out the documents that accompanied deliveries for state procurement, and other organizational shortcomings meant that the harvested wheat lost its variety classification. As a result, last year only 47,000 tons of strong wheat were delivered for state procurement, a tenth of the total volume harvested.

While the total production and procurement volumes of grapes, vegetables, potatoes and other produce were rising significantly, the farms were losing considerable income due to poor quality and narrow assortment, especially in the case of vegetable crops.

The managers of many farms, and even of some of the rayons, were not devoting the necessary attention to the quality of the crude cotton and its fiber yield. The Ministry of the Cotton Cleaning Industry was not showing due interest in improving the quality of production.

The USSR Food Program assigned our republic the task of increasing the average annual output of meat under the 11th Five-Year Plan to 150,000 tons; and that of milk, to between 850,000 and 860,000 tons. On average for 1981-1983, the annual output of meat was actually 152,000 tons; and that of milk, 869,000 tons.

On the whole, the republic was fulfilling the tasks set by the Food Program. But the decisions of the Azerbaijan CP Central Committee's March 1982 Plenum that outlined a large-scale program for the expansion of livestock production were not being realized entirely. And what was being accomplished was merely the foundation for the solution of very many current and long-term tasks.

The progress in implementing the measures adopted by the Azerbaijan CP Central Committee's Plenum must be constantly supervised by the party, soviet and economic organs, and must be periodically reviewed at the sessions of the buros and plenums of the party raykoms, gorkoms and obkoms, of the boards of the ministries and central agencies, of the councils of the RAPO's, in the party locals, and within the worker collectives.

After analyzing the reasons why livestock production was lagging in a number of rayons, Comrade Mamedov said that the all-union economic conference had sharply raised the question of strengthening livestock production's fodder base. Although the situation in that branch of farming was improving, not all reserves were being utilized as yet. For example, the republic's natural and climatic conditions permitted four or five mowings a year, but this entirely feasible task was not solved as yet. There were many problems also in the utilization of stored fodder, and in increasing the yields of fodder crops. The feed mills, feed preparation shops and feed kitchens must be utilized much better. In spite of repeated criticism, the republic's Ministry of Procurement had failed to adopt measures for a radical improvement of concentrated feeds and for broadening their assortment.

A large agro-industrial complex was established in the republic in the 1970's and 1980's. During this period, over 6.0 billion rubles was allotted for the development of the economy's agricultural sector alone. Productive fixed capital increased 3.2-fold. The capital-labor ratio improved 1.9-fold. In agriculture, the power required for starting and normal operation increased 2.2-fold. The production assets base of the branches that processed agricultural products was strengthened considerably.

Efficient utilization of the economic factors in agriculture ensured the gross farm output's growth at rates faster than the growth rates of capital investment. On average for 1981-1983, the marginal return on 1 ruble of investment was 3.07 rubles. In comparison with the 10th Five-Year Plan, kolkhoz and sovkhos profits increased 1.8-fold while the total volume of capital investment for the development of agriculture increased only 31.4 percent. These indicators were convincing proof that the agro-industrial complex was developing dynamically, at high rates.

As emphasized at the all-union conference, the primary task was to improve the utilization of all capacities and resources, to strengthen the weak links, to optimally utilize the available capital and to perfect its structure. In accordance with this requirement of the CPSU Central Committee, it was essential that the party's obkoms, gorkoms and raykoms, the ministries and central agencies, the rayispolkoms, and the councils of the RAPO's concentrated their attention on the principal direction of intensification: on increasing the output per unit of existing and additional material and financial resources.

In a number of rayons the level of productive capital's utilization was low; the performances of the tractors, combines and other machinery were increasing slowly; the return on manufactured fertilizers and plant protectants was low; and excessive consumption of fuels and lubricants was being tolerated.

Shortcomings in the use of capital investments had led to disproportions between the production volumes and the capacities for the processing of farm products. A similar situation had arisen in the processing of grapes, fruits, vegetables and other produce. There were considerable reserves in utilizing the capacities of the enterprises in the food, meat, dairy, hulling and milling, and concentrated feed industries. If to this we added the fact that many of the projects for the agro-industrial complex were being delivered with serious shortcomings, the elimination of which required much time and materials and financial resources, then we could obtain some idea of how great were the losses. The task was to ensure that all projects for the Food Program were completed on schedule and were of high quality.

At the all-union economic conference it had been noted that the level of farming depended to a large extent on the skillful use of land, the most important factor of production. Considerable work had already been done in the republic to this end. A steady trend of higher yields had been established.

However, this was not the situation everywhere. The yields were low on the farms in Kusarskiy, Divichinskiy, Udzharskiy, Kyurdamirskiy, Kakhskiy, Kazakhskiy, Yevlakhskiy and other rayons. Some of the kolkhozes and sovkhoszes were slow to introduce a scientifically substantiated system of farming; farming

practices were not being observed; and crop rotation was not being employed. The agricultural service and scientific network of the Ministry of Agriculture, and of the other ministries and central agencies concerned with the APK, were not exerting as yet their necessary influence on the efficiency of farming.

Close attention must be devoted to the efficient use of irrigated land, from which the republic's crop production was obtaining 80 percent of its output. However, improved land was not being farmed efficiently everywhere. There were cases of obtaining low yields of grain, corn, vegetables and other crops per hectare of irrigated arable land.

For strengthening the economy of sovkhoz and kolkhoz farming and for improving its efficiency, the party was attributing great importance to the introduction of khozraschet, brigade contracts, and other forms of work organization and remuneration that encouraged the collectives' receptiveness, initiative and care, and gave them incentives to attain high profits. These problems, Comrade Mamedov emphasized, had been in the center of attention at the all-union economic conference.

A certain amount of work to this end had been done recently in the republic. More than 600 kolkhozes and sovkhozes had changed over to internal khozraschet; and about 7,000 brigades and links had begun to work on the basis of collective contracts. The proportion of contract subdivisions was high in cottongrowing, winegrowing, tobacco farming, sheep breeding, and poultry farming.

However, the contract's importance was not appreciated everywhere. The proportion of contract subdivisions was low in livestock production, and in general on the sovkhozes of the Ministry of the Fruit and Vegetable Industry and of the State Committee for Viticulture and Winemaking. More attention must be devoted to the level of profitability, one of the principal summary indicators of the efficiency of production.

Under the new conditions of farming, the role and responsibility of the scientific research institutes and of the republic's entire scientific potential were increasing immensely. In recent years, some of the institutes had made an important changeover to the problems of the economy's agricultural sector. But there still were many unsolved problems in the area of planning and organizing scientific research, and in its level, quality and final results. The demands were great especially on the economic sciences.

This is the second year that agro-industrial associations were functioning in the country, continued Comrade Mamedov. They were gaining strength, accumulating experience and generating confidence, confirming in practice the soundness of the measures that the party had adopted to perfect the administration of rural areas. Many of the RAPO's had interpreted their tasks correctly and were concentrating their attention on the basic problems of the agro-industrial complex and of the villages' social development. Initiative and socialist enterprise were typical of the Shekinskiy Rayon's agro-industrial association where all links of its economic services were functioning smoothly. The agro-industrial associations of Bardinskiy, Khanlarskiy, Lenkoranskiy, Shemakhinskiy, Agdamski and a number of other rayons had gained useful experience.



But by no means all RAPO's clearly understood the essence of the reorganization and their own rights and opportunities. Some of the associations were behaving passively and were copying the work style of the former rayon agricultural administrations, overlooking the problems of perfecting the links and economic interrelations between the farms and the enterprises and organizations that were serving the farms. A report at the all-union conference had pointed out particularly the problem of the interrelations of the sovkhozes and kolkhozes with their partners, all the other members of the RAPO's. This problem was a critical one in our republic as well.

In recent years, for example, interfarm combinations for livestock production had been established in many rayons. And even though they had been established with the contributions and lands of the kolkhozes and sovkhozes, the combinations often were forgetting their debt to the farms and were not allocating their profits to the shareholders' fund. Rural workers were still complaining about the quality of their partners' workmanship, and about the high cost of the services. The quality grade of the received farm products was often reduced, and data distortions were tolerated, even overcharging the farms. The heads of the republic's ministries and central agencies, and the local party, soviet and economic organs must sort this out and put an end to all abnormal phenomena.

The practice of the RAPO's demonstrated that many of the specialists and managers did not have an adequate knowledge of economics and were not making full use of the already existing regulations, documents and normatives. And this had a negative effect on work organization, and on strengthening planning and production discipline.

Where the interests of the farms met, there were many problems that the agro-industrial associations had to solve. Of considerable importance, for example, was the work of the RAPO legal service whose mission was to protect the farms' interests, in accordance with the laws. The statistical subdivisions and the control and auditing apparatus of the RAPO's had much to do to place accounting and reporting in proper order.

In this respect the work style of the agricultural ministries and central agencies must be improved considerably. The Ministry of Agriculture, the Ministry of the Fruit and Vegetable Industry and the State Committee for Viticulture and Winemaking were not always sufficiently forceful in directing in a scientifically substantiated manner the activities of the RAPO's to carry out the Food Program's tasks.

The sharp rise of the republic's agriculture had predetermined the immense changes in the social and cultural aspect of the Azerbaijan villages. At the same time, the problem of changes in the social conditions remained acute. The planned volumes of construction were not being fulfilled entirely.

Solution of the problems confronting the APK depended directly on how effective party leadership was, and on how the party committees were perfecting their organizing and political activity. As M. S. Gorbachev had noted in his report at the all-union economic conference, "The raykoms must regard as their basic duty not the issuance of instruction to rural workers telling them what to do and



when, but systematic work to increase the personnel's sense of responsibility for the work entrusted to them and for the final production results." This approach was typical of many of the party committees in the republic. Unfortunately, not all raykoms realized that for the party committees to concern themselves with the economy meant first of all to concern themselves with the people.

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## AGRO-ECONOMICS AND ORGANIZATION

### WASTE-FREE TECHNOLOGY DEVELOPMENT IN APK ENTERPRISES

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 5, May 84 pp 30-32

[Article by Professor A. Kurakin, doctor of geographic sciences, and docent L. Kurakin, candidate in economic sciences]

[Text] In the resolutions adopted by the 26th party congress, considerable attention was devoted to more complete and efficient utilization of raw-material and fuel-energy resources, as well as secondary raw materials. Much attention also was given to the development of waste-free, nearly waste-free, and energy-saving technologies. This is highly significant in terms of the close interrelatedness of goods produced by the agro-industrial complex. There is an annual accumulation here of up to 130 million tons of straw, 17 million tons of haulm, and millions of tons of waste products from the dairy, meat, sugar, vegetable oil, canning, wine-making and other areas of the vast food-producing industry. These waste products could be put to use as raw material for producing useful, economically important goods--including foodstuffs.

Agro-industrial associations(APO) established in all ASSR's, krays, oblasts and rayons are facilitating more complete utilization of raw-material and labor resources, as well as transport facilities.

The agro-industrial associations of Krasnodar Kray are among the most powerful in the RSFSR. Of the 124 crops cultivated in the USSR, more than 100 are grown in the kray. Among ASSR's, krays and oblasts, the agro-industrial complex of the Kuban occupies first place in the republic in terms of the production of the largest variety of agricultural products: cereals, corn, rice, sugar beets, sunflowers, fruits and vegetables, tobacco, tea, and meat. It takes second place in the production of vinyard products, cucurbits and milk.

This burgeoning agricultural production is being spurred by more than 300 large-scale enterprises of the food industry, including 17 sugar plants, more than 40 wineries, 8 large oil-producing plants, more than 10 vegetable-canning plants, 45 dairies, 21 meat and poultry processing plants, 6 essential-oil plants, 2 tea processing plants, 45 rayon food-processing combines, several dozen flour-milling, bread-baking, macaroni and pastry-making enterprises, breweries, distilleries, fish-processing, tobacco-processing, and other enterprises. The kray produces 48 percent of all the wine and vinyard products, more than 30 percent of the vegetable

oil, 29 percent of the granulated sugar, and 18 percent of the canned goods produced in the RSFSR. In the processing of agricultural raw materials, many waste products are formed which are used primarily as animal feeds and other products.

Agricultural and food industry wastes are being processed by two enterprises of the microbiological industry which produce nutrient yeasts, xylite, alcohol and other products, and by nearly 20 feed concentrate plants producing more than two million tons of feed concentrates per year. They are also used in feedlots and bonemeal plants.

The joint-economic enterprises, sovkhozes and kolkhozes support 1700 feed-processing plants, where agricultural wastes (straw, chaff, sugar beet tops, sunflower stalks and heads) are processed into valuable feeds. Part of these wastes, along with wastes from vegetable oil plants (sunflower seed husks) and wood-processing (sawdust, etc.) are processed in hydrolyzation plants, while flour-milling wastes (middlings), meat-packing, fish-processing, and other wastes of the food industry are processed in feed concentrate plants.

The closed cycle norm of waste-free technology has grown up within the beet sugar refining complex. Sugar beet tops are processed into feed and refining wastes (beet pulp) are used in the production of feed concentrates, or used directly as feed for hogs. A 108,000-head hog raising complex is located directly alongside the huge Timashevskiy sugar refinery. The manure is used to fertilize the sugar beets, while the molasses yields yeast and alcohol.

In the production of fats and oils, the nongranular part of sunflowers and soybeans is partially ensilaged together with sugar beet tops and second-crop corn to obtain a silage which contains up to 22 kg of digestible protein per ton. Part of the sunflower stalks and heads, along with the entire mass of seed husks from the oil processing enterprises (up to 200,000 tons annually) are processed at the Krasnodarskiy combine and the Kropotkinskiy chemical plant. Wastes from vegetable oil production (pulp) are used in the production of feed concentrates.

The chemical combines also process corn stalks, from which--like the husks of sunflower seeds and rice--they obtain xylite, an essential material for the canning and breadbaking industries. The hydrolyzation plants are developing the technology for processing wheat straw and rice straw. One ton of rice straw provides 100 kg of feed yeasts. Rice middlings yield rice oil and vitamins B<sub>1</sub>, B<sub>2</sub> and P<sub>p</sub>. Meat-packing and fish-processing wastes are turned into flour which goes into cattle feed or is used for the production of feed concentrates. It is projected that the annual production of meat, bone and fish meals will reach 3000 tons (in 1980, it was 700 tons).

Food industry wastes are starting to be recycled on a broad basis. In the processing of apples, grapes, squashes and vegetables, residues are formed. These can be processed into dry powders suitable for further use in the food industry. Just in the food industry enterprises subordinate to the krayispolkom alone, 100,000 tons of fruit are being processed each year. Previously, the residues (40-45,000 tons) left from juice-pressing were given to kolkhozes and sovkhozes for use as cattle feed. Since 1980, they have undergone processing at the Sever-skiy grape-processing plant, where special equipment has been installed in order

to produce apple-pectin powder from apple leavings. Four more such installations were established in 1981, and by the end of the current five-year period, there will be considerably more of them.

The residue-based powder contains glucose, fructose, vitamins, micronutrients and other useful elements. The powders are put to use in the confectionary industry. One ton of fruit powder (in the production of confections) replaces 900 kg of sugar or 50 kg of citric acid, and provides a profit of 350 rubles. For example, by incorporating the use of fruit powders, the Armavirskiy macaroni and pastry combine saved 15-25 percent of its sugar costs on each ton of confectionary goods produced. More than 1000 tons of confections were produced in 1981 with the use of such powders. Production of them is expected to expand to several thousand tons by the end of the current five-year period. Wild apples and pears are also being processed into powders for use in the manufacture of lozenges, candy, marmelade, jelly, and so on.

The Novotitorovskiy agroindustrial combine has adopted the use of natural dyes made from the juice of garden beets to replace the artificial colors used to record grade markings on animal carcasses. In Krasnodar Kray alone, removal of the grade marking from carcasses resulted in losses totalling 75 tons of meat. Such losses will be avoided with the use of natural dyes. The Novotitorovskiy combine pioneered the production of natural juices and food powders derived from the waste products of basic production processes. The new technology can be employed the year round. Besides beets, it is also capable of processing squash, carrots and apples. The production line is manned by 12 workers. Apple-pectin powder is now being used at the Yeysk municipal food combine in the production of toffee.

The kray has the capacity to be processing as much as 600-700,000 tons of apple wastes and highly perishable fruits by the end of the current five-year period--obtaining from them up to 160,000 tons of fruit powder. Appropriate equipment, however, is essential for this.

At the Sochi experimental canning combine imeni V. I. Lenin, where flash-freezing technology has been introduced, a low-grade pepper which had been previously written off as worthless is currently being used in the preparation of a pungent flash-frozen vegetable snack. Tomato crops are beginning to be processed in their entirety: the high-grade fruit is being marinated, while the low-grade specimens yield puree. In processing seedy and stone fruit, high-grade specimens go into compote, while lower grades make juice-with-pulp or puree. Specialized technology and automated lines have been introduced for all of these production processes.

The Kurganskiy rayon food-processing combine initiated operation of waste-free technology in 1982 with the installation of an automated line for producing apple juice and glucose powder from apple wastes. Part of the powder is sold to another enterprise, and a coarser fraction of the powder yields the apple drink "Krasnodarskiy". The automated production line was installed by specialists and efficiency experts employed by the rayon food-processing combine.

In the past, at enterprises in Krasnodar Kray, more than 500,000 tons of buttermilk and milk skimmings, and up to 300,000 tons of dairy whey had gone to waste.

In 1980, however, 210,000 tons of whey was channeled into industrial reprocessing, including 21,200 tons sent to the breadbaking industry, 15,900 tons sold to the public and to auxilliary farms, and 63,800 tons assigned to milk suppliers.

During the 10th Five-Year Plan, the processing of whey for other uses jumped from 25 percent to 71.4 percent of total production, while it reached 77.7 percent of overall production in 1981. As a result of whey reprocessing, dairy plants in the kray realized additional output valued at 3 million rubles, and the economic impact amounted to a savings of over a million rubles. The reprocessing level for buttermilk and milk skimmings has reached 60 percent. The production of curds and fermented-milk products from skimmings and buttermilk amounted to almost 120,000 t.

At the Kalininskiy cheese-processing combine, construction was completed in 1981 on a section intended for the drying of whey and dry whole-milk substitute totalling 1.5 tons. Plans call for the inclusion of a facility for drying whey in the construction of the Labinskiy cheese-processing combine. Similar sections will be put into operation at the Krasnoarmeyskiy cheese-processing plant and the Maykop milk combine.

As a result of the utilization of dairy industry wastes during the processing of milk, additional production valued at 7.3 million rubles was realized in the 10th Five-Year Plan.

Waste-free and near waste-free technology have also received development in the meat-processing industry. Specifically, dry feed for livestock has been developed from meat and bone scraps. The utilization of blood for feed purposes increased during the five-year period by 20 percent, bone--by 32 percent, and subproducts of the second category--by more than 20 percent, all of which has made for the injection of an additional 7,800 tons of valuable products into the food reserves. The widespread use of various protein supplements in the making of sausage products and convenience foods has resulted in a savings of 8,600 tons of meat. A method has been achieved for producing bloodmeal from the blood of birds (in the past, all poultry blood had gone to waste).

At the Krasnodar meat-packing combine, more than a half million rubles in profit is resulting annually from waste recycling. Facilities for recycling production wastes have been installed at the Timashevskiy, Labinskiy and Pavlovskiy meat-packing plants, and at the Starominskiy poultry-processing combine; sections for the manufacture of high-technology goods will be constructed during the 11th Five-Year Plan at the Tikhorts and Sochi meat-packing combines. Several meat-packing combines are undergoing renovation and updating of equipment, which facilitates the reduction of losses and an increase in the efficiency of raw-materials processing. At the Tuapse meat-packing combine, for example, an automated production flow line has been installed for the manufacture of bone-oil and bone-meal. These types of lines will be installed also at the Krasnodar, Sochi, Ust'-Labinskiy and other meat-packing combines.

With the formation of agro-industrial associations within the boundaries of ASSR's, krays, oblasts and rayons(RAPO), the conditions for closer relations between the food-processing industry and the agricultural sector have been greatly improved.



Within the framework of the RAPO's and kray(oblast) agro-industrial associations, the processing of goods has attained a much higher level, and the proper conditions have been established for the development of waste-free and near waste-free technology in the food-processing industry. All of this goes a long way toward increasing food supplies within the nation, successfully implementing the Food Supply Program, and preserving the environment.

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## AGRO-ECONOMICS AND ORGANIZATION

### INTER-FARM COOPERATION OF LIVESTOCK ENTERPRISES REVIEWED

Moscow SEL'SKAYA ZHIZN' in Russian 6 Jun 84 p 2

/Review prepared by USSR Ministry of Agriculture and Editorial Board of SEL'SKAYA ZHIZN': "Effect of Cooperation"/

/Text/ An improvement in the level of socialization of production is an organic part of the economic strategy and an important element of the party's agrarian policies. The development of production specialization and concentration based upon an expansion of inter-farm and inter-branch relationships, as advanced in the Food Program in the form of one of the trends to be followed for its implementation, is directed towards achieving the above-mentioned improvement. Inter-farm cooperation is called upon to play a special role at the present time, with the task having been established to raise considerably the return from the potential created at the kolkhozes and sovkhozes and achieving further growth in labor productivity and a decrease in output production costs.

At a majority of the inter-farm formations, as a rule, better use is made of productive capital and logistical, financial and labor resources and the productivity of livestock is higher than at kolkhozes and sovkhozes. For example, the average daily increase in cattle weight at inter-farm enterprises throughout the country is higher by 51 percent than the average indicators for kolkhozes, feed consumption per quintal of weight increase is lower by 13 percent, labor expenditures are lower by a factor of 3.4 and production costs are lower by 29 percent.

Today, with new organs of administration operating in the various areas -- agroindustrial associations -- a considerable increase has taken place in the opportunities available for further activating the development of the process of inter-farm cooperation. Indeed, almost all of the kolkhozes and approximately two-thirds of the sovkhozes are participating in inter-farm cooperation and agroindustrial integration. At the beginning of 1984, there were more than 13,000 different inter-farm, agroindustrial and scientific-production formations in operation throughout the country. Over the past 7 years their number has increased by more than one and a half times.

#### Increasing the Return From Potential

On 25 April of this year, during a speech delivered before a session of the CPSU Central Committee's Commission on the Preparation of a New Editorial Staff

for the Party's Program, the General Secretary of the CPSU Central Committee Comrade K.U. Chernenko emphasized: "The Program should clearly define the course being followed by the party aimed at introducing the latest scientific and engineering achievements into production operations and improving the forms of administration." Specialization and growth in production concentration based upon inter-farm cooperation are promoting the more extensive use of scientific discoveries in agriculture and the use of an industrial technology.

Truly, production operations must be increased in scale taking into account the latest scientific and engineering achievements. Experience has shown that the enlargement of farms alone will not solve this problem. Inter-farm cooperation provides a way out of this situation. Those branches and services which require a greater scale of activity are establishing themselves on an inter-farm basis.

At the present time, the value of the fixed productive capital of an agricultural nature in inter-farm formations amounts to more than 5 billion rubles. The capital-labor ratio for one average annual worker at inter-farm enterprises throughout the country is higher by a factor of 2.4 than the figure for kolkhozes and higher by a factor of 1.4 for sovkhozes.

Importance is attached to utilizing the production potential accumulated in a manner so as to produce a maximum return. Much has already been accomplished. Eleven percent of the weight increase for all types of livestock and poultry, compared to the overall volume in the country's public sector, is being produced on a cooperative basis. In addition, 35 percent of the non-calving young cows and cow-first heifers are being raised on a cooperative basis. Approximately 15 percent of the mixed feed being produced in the country is being prepared by inter-farm plants and departments. More than 5 billion rubles worth of construction-installation work is being carried out annually by the construction organizations and this is more than 40 percent of the overall volume of such work at kolkhozes and sovkhozes. In 1983, more than 1.8 billion rubles worth of services were provided on a cooperative basis. The profit earned by all inter-farm formations (less construction) in 1983 amounted to 1.4 billion rubles. It is important to emphasize that more than 70 percent of this profit was distributed among the farms -- the participants in cooperation.

Many fine examples can be found illustrating the skilful utilization of the advantages offered by inter-farm cooperation.

At a fattening complex of the Mir Sovkhoz, which serves in the capacity of an inter-farm enterprise, dairy calves which are 15-20 days old are brought in from 33 farms in Baranovichskiy and eight other rayons in Brest Oblast. And this is not surprising -- it is profitable.

The sovkhoz pays 13 rubles per kilogram of live weight in the young stock. What explains such generosity?

The farm workers are confident that, owing to a strong feed base and high weight increases in the animals, not only will the expenses required for procuring the young stock be repaid but in fact a good amount of profit will also be obtained. And such profit is realized. In 1983 it amounted to more than 5 million rubles

from the sale of products. The expenses for building the complex (16.7 million rubles) were repaid within the course of 3 years.

All of the land (approximately 5,000 hectares) at the Mir Sovkhoz is being used for feed production. Sixty quintals of feed units are being obtained from each hectare of arable land here. In addition to making feed available for its own animals, the sovkhos also supplies feed to other farms. The average daily weight increase in the animals is 1,200 or more grams and their average delivery weight -- 495 kilograms. Only 3 manhours and less than 6 quintals of feed units are expended per quintal of weight increase.

During the years that the fattening farm has been in operation, beef production in the rayon increased by a factor of 1.9, labor expenditures fell by almost twofold and the total amount of profit increased by 4.3 million rubles. It is by no means an accident that the Mir Sovkhoz was chosen to serve as an example. The new stage in the socialization of production and the beneficial influence generated by the decree of the CPSU Central Committee entitled "On Further Development of Specialization and Concentration in Agricultural Production Based upon Inter-Farm Cooperation and Agroindustrial Integration" are reflected in its inter-farm activity as in a mirror.

The basic principles for the developing process of cooperation are observed in a very strict manner on the farm. This includes voluntary participation in inter-farm cooperation, a scientific approach to solving the problems of cooperation, the retention of economic independence by the kolkhozes and sovkhoses, democratic centralism in the administration of the inter-farm formations and the material interest of the farms -- those participating in cooperation and their workers -- in joint activity.

And here is still another example. In Kursk Oblast, the capability of the Khomutovskiy Inter-Farm Complex for Pork Production is 20,000 head. Prior to concentrating such a large number of animals at this location, it was necessary to find solutions for some very simple problems: what should they be fed and how should they be maintained? But this was not done. And the result: the average daily weight increases in the animals were lower than 140 grams, at a time when the consumption of feed per quintal of weight increase was 9.7 quintals of feed units. The loss in youngstock reached up to one third of the average annual number of head. Hence the losses amounted to 1 million rubles annually.

It turns out that it would be unrealistic to await the results of the inter-farm activity of enterprises having such a beginning. Similar to 14 other inter-farm enterprises for pork production in the oblast, it lacks the land required for feed production. The kolkhozes and sovkhoses which are responsible for supplying the feed are unable to do so for one half of the animals and thus the enterprises are required to purchase the missing amounts from outside organizations at an exorbitant price.

To Stop Does Mean To Fall Behind

These two examples indicate that the party committees and agroindustrial associations must devote constant and firm attention to inter-farm cooperation.

Experience has shown that no fruitful results can ensue from attempting to set one's hopes on the objectivity of the process or to justify it on the basis of one's own inactivity.

Despite the apparent advantages of specialized enterprises, created based upon the principles of inter-farm cooperation, over conventional farms, the attention being given to developing this process has slackened somewhat in a number of areas. Recently a reduction has been observed in the number of inter-farm formations in the sphere of agricultural production: in the RSFSR -- by 195, Ukrainian SSR -- by 48, Belorussian SSR -- by 30. Under various pretexts, the elimination of inter-farm enterprises in a number of oblasts in the RSFSR is continuing.

In many instances the enterprises are being given state plans for procuring many types of field crop husbandry products and this is restraining their own feed production operations.

In some republics, krais and oblasts, shortcomings are being noted in the organization of labor in animal husbandry. Only a few brigades and teams have been created for work on a collective contract basis, the mechanization of labor-intensive processes has not been introduced in all areas and the workload for a worker charged with servicing the livestock is low. In this regard, it can be stated that in Georgia, Azerbaijan, Kirghizia and Armenia the labor expenditures per quintal of weight increase in cattle at inter-farm enterprises are considerably higher than the planned expenditures.

The following picture is often observed: a modern complex for the fattening and maturing of livestock is placed in operation and these same livestock are observed there a month later or more and even years later. There have been instances of there generally being no need for erecting a complex and yet a tremendous amount of money was expended.

For example, in the Karachayevo-Cherkess Autonomous Oblast in Stavropol Kray, the decision was made to expand the production base at the Gornyy Sovkhoz. Over a period of 4 years it increased by almost threefold and reached 23,000 livestock billets. However, they had not taken into account the fact that the large Erken-Shakharskoye Inter-Farm Enterprise was located in this oblast and that it had more than 15,000 livestock billets. The results were lamentable. There was a shortage of young stock that could meet the requirements for the technology employed in raising them and the plan for producing weight increases was being fulfilled by only one third.

At inter-farm formations throughout the country, approximately 16 percent of the billets for the fattening of cattle are empty, for swine -- 20 percent and for sheep -- 30 percent. The level of utilization of production capabilities for cattle is low in Azerbaijan, Georgia, Uzbekistan, Orel, Ryazan, Tula, Yaroslavl, Volgograd, Kuybyshev, Saratov, Sverdlov and Perm oblasts, in the Mordovian and Dagestan ASSR's and in the Russian Federation.

There are also shortcomings in the production-economic interrelationships of inter-farm formations with those farms participating in cooperation. Quite often an equivalent exchange in the results of inter-farm activity is not



observed and the established order for drawing up the plans for agricultural product procurements and for distributing the profits obtained from inter-farm activity is violated.

Understandably, all of this tends to restrain the development of inter-farm cooperation. The new organs of administration must eliminate these negative factors. Recently, many councils of agroindustrial associations have begun to devote greater attention to the problems concerned with strengthening specialization and concentration in agricultural production, while taking into account the prospects for more harmonious development for the entire region. All measures are being approved on a collective basis and only after their high economic effectiveness has been convincingly validated and their benefit to all participants in the agroindustrial complex, particularly the kolkhozes and sovkhozes, has been clearly expressed. In the process, the rayon agroindustrial associations will utilize the rights extended to them for establishing the accounting prices for the livestock, feed, materials and other resources and approving the estimates and rates.

Improvements in production specialization and concentration, based upon inter-farm cooperation and integration, will make it possible for workers attached to the agroindustrial complex to accelerate considerably the rates of development for all branches and to implement more successfully the tasks set forth in the country's Food Program.

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## AGRO-ECONOMICS AND ORGANIZATION

### RAPO PROCUREMENT, SALES, PROCESSING SECTION FUNCTIONS OUTLINED

Moscow EKONOMICHESKAYA GAZETA in Russian No 29, Jul 84 p 15

/Article: "Procurements, Marketing and Processing of Products"/

/Text/ From the model statute for the Department for Procurements, Marketing and Processing of Agricultural Output of the working organ of RAPO /rayon agroindustrial association/.

The Department for Procurements, Marketing and the Processing of Agricultural Output participates in the preparation and examination of recommendations for the draft plans for procuring products and delivering them to the processing enterprises and it assists in organizing the acceptance of products directly on the farms.

Jointly with Gosinspektsiya for Procurements and the Quality of Agricultural Output, the workers attached to this subunit organize the drawing up of contracts with the kolkhozes and sovkhoses; they undertake measures to ensure that all agricultural products intended for sale to the state by the kolkhozes and sovkhoses are accepted by the appropriate procurement and other organizations.

Jointly with Gosinspektsiya for Procurements and the Quality of Agricultural Output and the procurement, processing and trade organizations, the department develops and submits for examination by the RAPO council recommendations for determining the raw material zones for the processing enterprises and the farms to be assigned to them -- the suppliers of raw materials. It also ensures the development and control over the carrying out of measures aimed at preventing losses, reducing transport expenditures and ensuring the preservation of the agricultural products during all stages in the technological cycle for their production -- procurement, transporting, processing, storage and sale.

Together with other agricultural administration departments of the rayon executive committee, it determines the requirements of the kolkhozes, sovkhoses and other agricultural enterprises for transport equipment and packaging materials during the procurement period for the agricultural products, it prepares recommendations for organizing their shipments and it submits them for examination by the RAPO Council; it exercises control over the observance of the rules for preparing the agricultural products for sale, the acceptance and the

preparation of the accompanying documents by the farms and procurement organizations and also over the accounts maintained among the kolkhozes, sovkhoses and other enterprises and organizations engaged in the procurement, processing and storage of products. It participates in the preparation of those documents required when a procurement specialist or consignee refuses to accept products sold by the kolkhozes or sovkhoses and also in determining the number and quality of the mentioned products.

Jointly with the State Inspection for Procurements and Output Quality, the Department of Procurements submits its findings to the RAPO Council on the possibility of releasing the farms, in the established manner, from material responsibility for non-fulfillment of their contractual obligations, as a result of unfavorable weather conditions, infectious diseases, natural calamities or fault on the part of the procurement specialists.

It develops recommendations for strengthening the logistical base for agricultural product procurements and it participates in determining the distribution for the construction of enterprises, bases and storehouses for the acceptance, storage and processing of agricultural output by the procurement and processing enterprises and other organizations in the rayon; it provides assistance in developing direct relationships between the kolkhozes, sovkhoses and other agricultural enterprises and organizations on the one hand with industrial and trade enterprises on the other and also in converting over to products being accepted directly on the farms and being shipped by means of transport equipment made available by the procurement agencies.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

UDC 631.3:061.4

### NEW EQUIPMENT ON DISPLAY AT MOSCOW INTERNATIONAL EXHIBITION

Moscow TRAKTORY I SEL'KHOZMASHINY in Russian No 5, May 84 pp 1-5

[Article by USSR Minister of Tractor and Agricultural Machinebuilding A. A. Yezhevskiy, chairman of the Organizing Committee of the Sel'khoztekhnika-84 International Exhibition: "The Sel'khoztekhnika-84 International Exhibition": Reference article published in JPRS UAG-84-027, 31 Jul 84]

[Text] The Ministry of Tractor and Agricultural Machinebuilding with the assistance of the USSR Chamber of Commerce and Industry is organizing in Moscow in May 1984 the international exhibition "Agricultural Machines, Equipment and Instruments"--"Sel'khoztekhnika-84." This is the fourth international review of equipment for agriculture. The three preceding similar exhibitions (1966, 1972 and 1978) were a success and yielded positive results.

A distinctive feature of the 1984 international exhibition is the fact that it is taking place under the conditions of the implementation of the USSR Food Program and is called upon to promote the acceleration of scientific and technical progress in the area of the retooling of agricultural production.

The completion for the most part during the period to 1990 of the complete mechanization of agriculture on a new technical basis is the most important tasks of the sector of tractor and agricultural machine building, which were envisaged by the decisions of the 26th CPSU Congress and the May (1982) CPSU Central Committee Plenum. It is planned to deliver during the decade to rural workers more than 3.5 million tractors, more than 1 million grain combines and other agricultural machines.

Attaching paramount importance to the settlement of the questions of the mechanization of agricultural production for the purposes of the quickest possible implementation of the Food Program, the CPSU Central Committee and the USSR Council of Ministers adopted the decree "On Measures on the Further Increase of the Technical Level and Quality of Machines and Equipment for Agriculture, the Improvement of the Use, the Increase of the Production and Deliveries of Them in 1983-1990," which envisages the radical increase of the technical level, quality and reliability of tractors, combines, machines and equipment for plant growing.

In all 34 production and 15 scientific production associations with their plants, institutes and design bureaus are carrying out the fulfillment of the posed tasks in the sector of tractor and agricultural machinebuilding.

The NATI, VISKhOM and NIItaktorosel'khoz mash Scientific Production Associations, which have been set up in the sector and are the main scientific and technical (technological) centers in the area of tractor building, agricultural machine building and the technology of machine building, as well as specialized scientific and technical centers for the development of new equipment and the technology of its production are carrying out the coordination of scientific research and experimental design work, the scientific methods supervision of the most important directions of the improvement of the System of Machines for the complete mechanization of agricultural production and the forecasting of the development of designs of tractors and agricultural machines, the increase of their technical level, quality and reliability and the use of advanced materials.

All the activity of the working people of the sector--workers, engineers, designers and scientists--is actively aimed at the fulfillment of the tasks of the Food Program, the increase of the efficiency of agricultural production and the turning of agricultural labor into a version of industrial labor.

The development of the sector in recent years has made it possible to ensure the increase of the power-worker ratio in agriculture to 28.3 hp (in 1975--18.3 hp) and the power availability per 100 hectares of planted area to 320 hp (in 1975--217 hp).

The aim taken in the sector at the intensive factors of production, particularly the improvement of its structure with the increase of the proportion of high-power tractors in the deliveries to 32.4 percent (in 1980--24.3 percent) and of the production volumes of self-propelled agricultural machines, is substantially influencing the increase of the power capacities of agriculture.

At present 11 families of plow and row-crop tractors and 7 families of tractor and combine motors are being produced by the plants of the sector. Thus, for example, the Minskiy traktorny zavod imeni V. I. Lenina Production Association produces the base model--the MTZ-80 tractor with modifications: the MTZ-82 of increased cross-country capability, MTZ-80Kh cotton-growing version and the NTZ-82N low-clearance version, which are 87-98 percent standardized with the base model. The output of the first commercial batches of MTZ-100-102 tractors with a 100-hp motor is envisaged in 1984.

In the sector much attention is being devoted to the increase of the indicators of reliability, the corresponding further increase of the service lives of agricultural equipment and the decrease of the consumption of spare parts. Thus, the overhaul life of the basic assemblies of tractors has been increased by 15-25 percent and by now has been increased for motors to 6,000 motor hours, the transmission--to 6,000-7,000 motor hours, while for individual models (the YuMZ-6A, MTZ-80, MTZ-82)--to 8,000 motor hours; the reliability has been increased by 15-20 percent, the labor intensity of maintenance has been decreased by 8-12 percent.

The conversion of diesel engines to direct injection, which ensures the decrease of the specific consumption of fuel to 174-180 g/(hp-hr) at the rated power, has been completed for the purpose of decreasing the consumption of fuel and lubricants during the operation of tractors and combines. The consumption of oil has been reduced to 0.7 percent of the fuel consumption, while for some models it has been reduced to 0.5-0.6 percent.



The development of operations on ergonomics and technical esthetics is envisaged in case of the development of new tractors and agricultural machines. Vibration-proof cabs, including with safety frames on wheeled models, improved spring seats, which decrease the level of low-frequency vibrations at the workplace to less than one-half, and exhaust mufflers are installed on all the tractors. The range of tractors, which are equipped with air conditioners, heaters, automatic hitches, trailer air brakes and other means of the improvements of working conditions and labor safety, is being enlarged.

By 1990 not less than 600 new and modernized tractors and agricultural machines will be developed and assimilated. Among the equipment, which has to be assimilated during the 11th Five-Year Plan, there are 14 descriptions of agricultural machines and accessories for the harvesting and postharvest processing of grain crops: reapers, combines, machines for the harvesting of the nongrain portion of the crop and lines of the postharvest processing of grain crops; 22 descriptions of cultivating machines and implements: plows, cultivators, combined units; 8 descriptions of sowing machines and planting machines; 17 descriptions of machines for the cultivation, harvesting and postharvest processing of vegetables and many other agricultural machines and implements.

At the same time the technical level, quality and reliability of the equipment being produced will be increased. For example, the original life of engines will be increased to 8,000-10,000 motor hours. The specific materials-output ratio of new and modernized machines and implemented, including plows and cultivators, will decrease by 13-15 percent, sowing machines--18-20 percent and combines for various purposes--10-15 percent, the mean time between failures will be increased by 1.5- to 3-fold.

The Sel'khoztekhnika Exhibition reflects the achievements of the sector in the implementation of the basic directions of the development of the national economy for 1981-1985, the USSR Food Program for the Period to 1990, as well as the Comprehensive Program of Socialist Economic Integration of the CEMA Member Countries.

In the Soviet section of the exhibition the Don-1200 and Don-1500 grain combines, the productivity of which is 1.5- to 1.7-fold greater than series-produced combines, are displayed. The fundamentally new SK-10 combine with a rotary thresher is of definite interest.

The KA-3,6 and RVK-5,4 combined units and the KFG-3,6 deep ripping cultivator are being used extensively for the basic and preplanting cultivation of the soil. These machines make it possible to decrease the number of passes of machine and tractor units over the field, to decrease the labor expenditures and to utilize high-power tractors efficiently. For example, the KFS-3,6 rotary sowing cultivator in one pass carries out the preparation of the soil, the application of mineral fertilizers, sowing and the packing of the soil.

The development of the KShU-12 and KShU-18 clutchless wide-cut cultivators provided an increase of labor productivity by 20-30 percent, while that of the clutchless wide-cut drills--the grain and fertilizer SZShP-14,4 and the stubble SZS-12--provided a decrease of the expenditures of labor to one-half to two-thirds. These machines also make it possible to reduce to one-seventh to one-fifth the expenditures on labor on their changeover to the transportation position.

The implements for the moldboardless cultivation of the soil, for example, the OPT-3-5, KPSH-5 and KPSH-9 subsurface cultivators, the GUN-4 mounted deep ripper-fertilizer, the BMSH-15 implements for the covering of moisture, the PTN-3-40, ShchN-2-140, RS-1,5 and RSN-2,9 plows, slitters and rippers for the cultivation of solonchaks soils and other cultivating equipment are of interest for soil-protection technologies for the purpose of the preservation of the fertility of soils and the combatting of water and wind erosion.

The PCh-4,5 chisel plow for the moldboardless ripping of soil to a depth of up to 40 cm is being displayed at the exhibition for the first time. This implement makes it possible to eliminate the excessive compacting of the top horizon and the subhorizon, while ensuring a greater productivity with a smaller consumption of fuel than in case of tilling with moldboard plows.

Our country is the largest producer of potatoes. The KSM-4, KSM-6 and KSM-8 4-, 6- and 8-row potato planters, the KNO-4,2 and KRN-4,2G dipper-cultivators and highly productive combines--the KKV-2A towed combine and the KSK-4-I self-propelled combine--were displayed at the exhibition.

Industry is producing a large number of diverse machines for the mechanization of sugar beet cultivation in various zones of our economy. Among the exhibits of this sector are the SST-8A, SST-12B and SST-18 8-, 12- and 18-row precision-seeding beet planters, the USMK-5,4B mounted cultivator-plant feeder and the PSA-2,7 automatic sprout thinner.

The harvesters--the BM-6A top harvester and the KS-6B and RKS-6 self-propelled root crop harvesters, which in their technical level surpass many foreign analogues--are of interest. These combines are equipped with automatic hydro-mechanical guides of the tools among the rows of plants, while the KS-6B and RKS-6 self-propelled combines are equipped with automatic pilots. The SPS-4,2 beet loader and cleaner--the latest unit in the mechanization of beet production--ensures the cleaning and loading operations in case of the shipment of the roots of the beets to processing enterprises. The introduction in agricultural production of such a complex of machines increases labor productivity by two- to threefold.

New equipment for work in vegetable growing and at hothouse complexes is being displayed. Machines for the mechanization of the harvesting and processing of flax and hemp and for the cultivation and harvesting of cotton and machines for the application of fertilizers and watering are also displayed.

A distinctive feature of the current exposition of the USSR is the primary display at it of new and modernized tractors. Among them are the new MTZ-142 150-hp general-purpose row-crop tractor, the DT-175 caterpillar plow tractor, tractors and self-propelled chassis of class 0.6 with increased cross-country capability, the modernized T-150KM, T-150M, MTZ-100/102 and T-90S tractors, new versions of the MTZ-80 tractor--the MTZ-82K alpine version, the MTZ-82R rice-growing version, the MTZ-80Kh2 cotton-growing version (for narrow row spacings) and others.

The work on the introduction of turbocharging, as well as the intermediate cooling of the supercharging air as an effective means of increasing the power indicators of diesel engines and improving their fuel economy is widely represented at the exposition of tractor and combine engines.

The range of hydraulic units has been augmented by devices which broaden the functional qualities of the hydraulic systems of tractors: regulators with changeable control, power steering units, a hydraulic power takeoff system, electrohydraulics and other instruments.

The new agricultural equipment will conform to such important requirements of today and tomorrow as the preservation and increase of soil fertility, the decrease of the losses of agricultural products, fuel and mineral fertilizers, the sharp reduction of the consumption of chemical plant protection agents and so on. An important feature of it is the wide range, which makes it possible to ensure practically entirely the complete mechanization of agricultural production in the majority of natural and climatic zones of our country.

Thus, specialists and visitors of the exhibition will familiarize themselves with highly productive equipment, which is necessary for the performance of practically all agricultural operations.

During the implementation of the plans of the 10th and current five-year plans the economic, scientific and technical cooperation of the CEMA member countries in the area of tractor and agricultural machine building underwent further development. Reciprocal deliveries of tractors and agricultural machines are increasing rapidly, their range is being enlarged. Tractor and agricultural machine building in the CEMA member countries is being developed on the basis of the concluded long-term multilateral agreement on the specialization and cooperation of production. In conformity with the division of labor between the CEMA member countries tractors of classes 0.6-6, grain combines and machines for the tilling of the soil and the cultivation and harvesting of sugar beets, potatoes, flax and hemp are being delivered from the USSR. Bulgaria is delivering to the USSR vineyard tractors, Romania is delivering tractors for work in hothouses.

An extensive program of cooperation in the area of the increase of the technical level of reciprocally delivered products, the development of new units and assemblies, the improvement of production technology, standardization, unification and the use of new materials is being implemented.

For the purpose of the pursuit of a uniform scientific and technical policy in the area of the development of new equipment between the USSR and the CEMA member countries the International System of Machines for the Complete Mechanization of Agriculture and Forestry has been formulated and adopted, the joint formulation of forecasts of the development of tractor and agricultural equipment is being carried out regularly.

Bilateral cooperation is being conducted with firms of Italy, France, Japan, the FRG and other capitalist countries.

The problems and tasks in the area of the mechanization of agriculture, which were posed by the May (1982) CPSU Central Committee Plenum, which approved the USSR Food Program, hold a central place at the Soviet exposition, which in the language of figures and facts tells about the use of the increased economic possibilities of the country in order to provide the population in the shortest possible time with all types of necessary foodstuffs.

The Sel'khoztekhnika-84 Exhibition is a new stage in the development of international economic, scientific and technical cooperation, which contributes to the acceleration of scientific and technical progress in the area of the development and improvement of tractors and agricultural machines.

#### PHOTO CAPTIONS

1. p 2. T-150M Tractor. Traction class 3, service power of engine of 200 hp. Designed for the performance of basic general-purpose agricultural operations in aggregate with wide-cut machines and tools, as well as transport operations. Features: direct-injection, super-charged diesel engine, high power, articulated frame, transmission with shifting under a load, power steering, drive axles with automatic interlock, independent two-speed power takeoff shaft, three-point suspension system with combined regulation, a comfortable protective cab, traveling speeds of 3-30 km/hr.
2. p 2. T-150 Tractor. Traction class 3, service power of engine of 150 hp. Designed for basic general-purpose agricultural operations, can be used for loading and unloading operations. Features: high power, direct injection, transmission with shifting under a load, independent two-speed power takeoff shaft, elastic-balance running system, improved comfortable cab. Traveling speeds of 2.1-15.9 km/hr.
3. p 2. MTZ-100 Tractor. Traction class 1.4, service power of engine of 100 hp. Designed for the performance of all types of interrow cultivating and harvesting of row crops in aggregate with suspended and towed machines and implements. Used in transport, road construction and other operations. Features: direct-injection, super-charged diesel engine, transmission with shifting under a load and reverse, power steering, independent two-speed power takeoff shaft, three-point suspension system with combined regulation, improved comfortable cab. Traveling speeds (with reducing gear) of 0.41-34.3 km/hr.
4. p 4. RUM-8 machine for the application of mineral fertilizers and lime. The productivity is 13-25 hectares/hr; the carrying capacity is up to 11 tons; the width of application: granulated--14-20 m; powder --8-14 m.
5. p 4. KSK-4-1 potato combine (combine-loader) for work on light- and medium-textured soils. Designed for the simultaneous digging of four rows of potatoes, the separation of the tubers from the soil,

tops and plant residues with the subsequent conveyance of the tubers to transport which runs alongside. The productivity per hour of basic time is 0.83-0.89 hectares; the operating speed is 2.96-3.18 km/hr.

6. p 3. Don-1500 self-propelled single-drum grain combine with a thresher width of 1,500 mm. Designed for the direct combining and separate harvesting of grain cereal crops in the basic grain-sowing zones of the country. Has a set of accessories for the harvesting of leguminous, groat and oil-bearing crops, corn, seed plants of grasses and soybeans. The productivity per hour of basic time is 10.1-11.5 tons/hr; the capacity--7-8 kg/sec; working width--5,6,7 and 8 m; the speed in basic operations: with engine drive--0.7-8.2 km/hr; hydraulic drive--0-10 km/hr.
7. p 3. MTZ-142 Tractor. Traction class 2, service power of engine of 150 hp. Designed for the cultivation and harvesting of row crops with multirow machines and combined units, as well as for general-purpose operations. As compared with the MTZ-82 tractor it provides an increase of productivity by 1.3- to 2-fold and of the tractive power by 74 percent, has a 10-percent better fuel economy.
8. p 3. KSHU-12 clutchless wide-cut cultivator for the continuous cultivation of soil. The productivity is 8.73-11.36 hectares/hr; the operating speed is 5.6-10.4 km/hr; the working width is 10 and 12 m; the cultivating depth is 6-12 cm.
9. p 4. The SKPP-12 general-purpose single-seed drill is designed for the precision planting of graded or sorted seeds of corn and sunflowers, castor plant, soybeans and sorghum with the simultaneous application of mineral fertilizers in the rows, which are separated from the seeds, and the compacting of the soil in the planted rows. Used in all soil and climatic zones, except the zone of alpine farming. The productivity per hour of basic time is 10 hectares; the operating speed is not more than 12 km/hr, the operating width is 8.4 m.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

### PROBLEMS WITH MINITRACTOR, MECHANIZED SMALL EQUIPMENT

Moscow SEL'SKAYA NOV' in Russian No 5, May 84 pp 12-13

[Letters to the editor: "Mini-Equipment Raises Questions"]

[Text] "Finally a minitractor with a trailer and various accessories for the tilling of the soil on private, garden and orchard plots has been developed by our industry. But those who have large plots of land need this tractor. I have only 0.05 hectare of land, no barn and garage, and I will not take from my pension money for the purchase of such a minitractor. And still I also want to haul products from my 0.05 hectare with transport, and not lug them on my shoulders. So, I dream....

"With the coming of the harvesting of the crop I will convert my motorized plow (more precisely, motor block--Editor) into a means of transportation and will transport the entire harvest, without resorting to the services of private contractors and 'odd jobbers.' The speed of such a means of transportation should not exceed 10-15 km per hour, so that everyone without a driver's license could operate it, like a bicycle.

"But here is the bad luck: a motorized plow in the furrow is a motorized plow. Having ganged it with a cart, we will get a means of transportation, which will immediately attract the attention of the State Motor Vehicle Inspection Administration. (They told me that the State Motor Vehicle Inspection Administration would take it away, if I drive it on the road.) It is necessary to settle this question.

"But for the present I manage with a bicycle, but I am no longer able to carry loads on it. Some people have begun to sell or abandon the plots, while they fall the share of those who have private motor transport.

"If the motorized plow were to go, as they say, to work, it would have a mass demand and would facilitate the labor of the majority."

P. V. Red'ko

Orenburg

"I work in the city at a plant, but I live 30 km from Riga, I go to work by electric train. Thousands of Riga workers, like me, live in rural areas and

have private plots. But we till them with great difficulty. The sovkhos, say, or the kolkhoz officially does not allocate a tractor to us under any conditions; they have enough troubles of their own. If I reach an agreement with a tractor driver, then, first, he comes when all the agricultural seasons are past and, second, this is expensive--they, the tractor drivers, no longer know how much money to take from you.

"And what about hauling firewood from the forest? And what about, say, the same hay? Here we are left with a wheelbarrow, a shovel, as well as a small plow, which I pull through the furrows, while my wife holds the handles....

"All the same we manage a fairly big farm: we keep a piglet, chickens, a goat, we plant potatoes and vegetables. We provide ourselves with products. But, I repeat, all this is achieved by enormous physical expenditures. The whole matter comes down to the fact that there is no draft power. Either a minitractor or motor blocks are needed, but where are they?

"In connection with the remoteness of this prospect, a question arises: If local craftsmen make minitractors from available means and materials, what is this--illegal? And the militia can take them away and can also call the owner to account, is that not so?

"There is another question. Sovkhozes and kolkhozes are writing off obsolete DT-20, T-16 tractors.... Is it possible on legal bases to acquire them or not? Everything goes under the press, and no one can give an intelligible answer. For whereas at a large and powerful farm this tractor is already both obsolete and worn out, on the small, private plot, with skillful care it will operate for another 10 years.

"Please, answer, whether it is possible to legalize the sale of written off tractors, as well as how are homemade tractors to be legalized, what is necessary for this?

"I am confident--and this is not only my opinion--that if there were if only one minitractor per five neighbors, the receiving centers would be overflowing with products."

A. F. Tupitsyn

Yelgavskiy Rayon,  
Latvian SSR

The editorial office receives many similar letters. The concerns of retiree P. V. Ped'ko, workers A. F. Tupitsyn and many other residents of villages and cities are understandable. People are relying on the facilitation of labor in the private subsidiary sector and on the garden plot and want to know what possibilities are being afforded them.

Small-scale equipment little by little has come off the conveyors: motor blocks with a set of hardware, motorized cultivators, power mowers.... As they reported to us from the Ministry of Tractor and Agricultural Machine Building, this year, 1984, the output of MTZ-05 motor blocks at the Minsk Tractor Plant

(about which the residents of other republics have also heard a lot) will be increased by threefold. While at the Gruzsel'mash Scientific Production Association work is being performed on the development of capacities for the production of the Super-600 motor block with a 5-7 hp motor and a set of agricultural implements for it.

The person, who is preparing to devise, purchase or rent a small tractor, a motor block with hardware and a cart, a power mower or a motorized cultivator, wants to consider what difficulties await him; he wants to know his rights and the general rules to which he will have to adhere.

Taking this into account, the editorial office acquainted competent organizations with the letters cited here: the USSR Ministry of Agriculture, to which the coordination of the work on the organization of the keeping of private plots by citizens, collective horticulture and gardening has been assigned; the Central Union of Consumers' Cooperatives, since it along with the USSR Ministry of Trade conducts trade in horticultural and garden tools and means of small-scale mechanization; as well as the State Motor Vehicle Inspection Administration of the USSR Ministry of Internal Affairs--in connection with the questions of the registration of homemade machines and series-produced motorized equipment with a transportation cart, of driver's licenses and so forth.

Explanations on the questions touched upon in the letters are given by:

P. D. Men'shikov, deputy chief of the Main Administration of the Mechanization and Electrification of Agriculture of the USSR Ministry of Agriculture

In conformity with the regulations of the registration and accounting of means of transportation, which were approved by Order No 20 of the USSR Ministry of Internal Affairs of 30 January 1975, all means of motor transport should be registered at the organs of the State Motor Vehicle Inspection Administration of the USSR Ministry of Internal Affairs. Here it is noted in the regulations that means of motor transport, which have been assembled from spare parts or have been rebuilt from discarded (written off) ones, are not accepted for registration. As to the self-propelled designs of various machines (means of transportation, minitractors and others), which have been produced by craftsmen, in each specific case permission for their operation should be agreed on in accordance with established procedure with the appropriate organizations (the local organs of the State Inspectorate for the Technical Condition of Machines and Equipment for Agriculture, the State Motor Vehicle Inspection Administration).

For the purpose of ensuring the preservation of equipment at kolkhozes and sovkhoses the USSR Ministry of Agriculture promulgated Order No 235 of 13 September 1977, which forbids farms to sell or transfer to private individuals tractors and other agricultural machines or individual parts, assemblies and units.

The production of motor blocks and small tractors with a set of interchangeable mounted and towed implements is envisaged for private plots. The mass production of this equipment has been assigned to the Kutaisi Plant of Small Tractors of the Ministry of Tractor and Agricultural Machine Building. Similar motor blocks are being produced in, for the present, small numbers by the Minsk Tractor Plant.

The sale of small-scale equipment to the population is being carried out through the trade network of the Central Union of Consumers' Cooperatives.

The USSR Ministry of Agriculture has commissioned the All-Union Scientific Research Institute of the Mechanization of Agriculture (VIM) jointly with the State Union Scientific Research Tractor Institute (NATI) and the Scientific Research Institute of Automobiles and Automobile Engines (NAMI) with the participation of the State Motor Vehicle Inspection Administration of the USSR Ministry of Internal Affairs to draft a uniform standardized document, which specifies the procedure of the production and use of both homemade and series-produced equipment for the private plot of citizens.

Yu. I. Lobov, chief of the Main Administration for Trade in Metalware and Household Goods of the Central Union of Consumers' Cooperatives

At present motor blocks are being produced only by the Minsk Tractor Plant and in connection with the limited production are being sold to the population only in the Belorussian SSR through the household stores of consumers' cooperatives. These motor blocks are furnished with a cart, a plow, a cultivator, a harrow and a ridger. The cost of the motor block with a set of implements is 1,800 rubles (the motor block alone is 1,300 rubles). The motor blocks are finding use on private plots with an area of 0.05 hectare and more. Restrictions on the operation and driving of this motor block have not been established by the State Motor Vehicle Inspection Administration.

During 1984-1986 a number of plants of the Ministry of Tractor and Agricultural Machine Building and the Ministry of the Aviation Industry plan to begin the production of motor blocks with engines of different powers.

For the tilling of small plots industrial enterprises will produce motorized cultivators which are equipped with low-power gasoline engines. In 1984 3,000 of them will be produced (the approximate price is 360 rubles).

V. A. Melkiy, chief of the Technical Supervision Department of the State Motor Vehicle Inspection Administration of the USSR Ministry of Internal Affairs

The motor blocks in combination with a transportation cart, which are presently being produced by industry for the needs of the population, cannot be allowed to travel over public roads in connection with the fact that they, as means of transportation, do not meet the present requirements on traffic safety. The prototypes have not undergone departmental tests with the participation of representatives of the State Motor Vehicle Inspection Administration, therefore it is impossible to say anything about their braking features and resistance to tipping, the principles of their steering are unknown; there are no lights and signaling devices. The appearance of these machines will lead to the disruption of the transportation process and will complicate the conditions on roads.

Consequently, these machines with a set of various tools can be used for work only on private plots. Such machines are not liable to registration, while the people, who work with these machines, do not need operating documents.

However, as follows from the letters of citizens, and from the very purpose of the transportation cart, the need for transportation, including over public roads, arises for the owners. So that access of these machines to roads with regulated road conditions in conformity with the existing standard documents would become possible, it is necessary to meet the following conditions:

1. To elaborate technical requirements, including traffic safety requirements, for the design of motor blocks in combination with a transportation cart (the USSR Ministry of Agriculture). In addition to purely technical matters, the traffic safety requirements (the maximum speed, the braking distance, signaling devices and so on) should be stimulated in these specifications.
2. To specify the manufacturing enterprises, to draw up and to approve in accordance with established procedure the design and technical specifications (the Ministry of Tractor and Agricultural Machine Building).
3. To conduct preliminary and acceptance tests in accordance with established procedure of the prototypes of this equipment (by analogy with the testing of motor transport equipment) (the Ministry of Tractor and Agricultural Machine Building, the manufacturing enterprises).

Since these machines are acquiring the rights of means of transportation, by analogy it is also necessary:

4. To draw up a list of medical contraindications, which prevent access to the driving of motor blocks with a cart, and to organize the medical examination of this category of drivers for the determination of their fitness for driving (the USSR Ministry of Health).
5. To elaborate a training program of drivers of motor blocks and to submit it of approval to the interested ministries and departments (the USSR State Committee for Vocational and Technical Education).
6. To draw up a draft of a statute, which regulates the procedure of the registration and issuance of certificates for the right to drive motor blocks with a transportation cart (the USSR Ministry of Agriculture, the USSR Ministry of Internal Affairs).

Thus, the access to roads of this agricultural equipment will require the considerable complication of the motor block and, consequently, the increase of its cost.

Therefore, motor blocks of two types, apparently, should be produced. The first type is for work on agricultural plots without the right of access to roads. In this case registration and operating documents are not needed. The second type is a motor block with a transportation cart, which satisfies the elaborated requirements and has been registered in accordance with established procedure. The person, who operates such a motor block, should have the appropriate driver's certificate. In such a case access of the motor block to specific roads can be allowed.



As to the question of agricultural mini-equipment, which is produced by rural efficiency experts and craftsmen, these machines, in our opinion, should meet the technical requirements for the production of homemade agricultural equipment (by analogy with homemade motor vehicles) and should be registered without fail.

It is advisable for the All-Union Scientific Research Institute of the Mechanization of Agriculture with the participation of other specialized institutes (the State Union Scientific Research Tractor Institute, the Scientific Research Institute of Automobiles and Automobile Engines, the All-Union Scientific Research Institute of Traffic Safety of the USSR Ministry of Internal Affairs) to elaborate the technical demands on homemade components.

In case of the registration of this equipment in conformity with the procedure, which will be elaborated, the owners of homemade equipment should have documents which confirm the legality of the acquisition of the assemblies, parts and materials, which are used for its production.

From the editorial office. Thus, the Ministry of Agriculture indicates the need for registration in the State Motor Vehicle Inspection Administration. The Central Union of Consumers' Cooperatives, without going into details, reassures us that restrictions on the use and on the driving of a motor block have not been established by the State Motor Vehicle Inspection Administration. While the State Motor Vehicle Inspection Administration on its part makes it known that motor blocks with carts--in the form in which they are being produced today--cannot be allowed at all on public roads.

But, when buying a motor block with a cart for the transportation of small loads, does a person hope that he will haul the hay from a distant hay field, root crops and cereals from plots, which are formed into a field, over the road, and not through the air?

Is the State Motor Vehicle Inspection Administration not imposing too strong measures on small agricultural equipment, which is intended for private plots? A small steel "tortoise" will travel slowly over a motor road, which is not the largest and most congested, with its modest load. What are licenses, license plates, signal lights and others for, if this complicates the introduction in our daily life of a simple achievement of technical progress?

It is tempting to confine ourselves to criticism meant for the State Motor Vehicle Inspection Administration, but.... Numerous drivers of motor transport, before whom once in a while there "shows up" a "little one" (including a homemade one), which is being driven by a horticulturalist-gardener, and any such case, especially at twilight and in bad weather, as well as in case of an oncoming flow of vehicles, may become the cause of an accident and for certain nervous strain, will not understand and will not share our desire to put motor blocks with carts on the roads of the country without any delays. And not at all because its permissible speed is only 9 km per hour, but because this equipment, which also promises to serve the buyer as a means of transportation, is not equipped with a braking system, an electric light system, a "flash signal" or turn indicators. What would you say here and with what would you reply to the State Motor Vehicle Inspection Administration?

It is well known that the motor block with a set of implements for the tilling of the soil and with a transportation cart was intended for universal use. Is it not strange that, when developing, testing and introducing the new equipment for the countryside, the designers did not take care (while the clients did not demand this of them) to give series-produced motor blocks with ~~cars~~ the possibilities of a means of transportation? Such technical data, it turns out, are not incorporated in the Super-600 motor block, which is promised in the near future. Here is "super" for you.

V. V. Mudrakov, chief of the Design Department of the Soyuzsel'khoztraktor All-Union Industrial Association, as it appeared from the conversation, believes that a motor block with a cart does not need any brakes, lights and others, since, he says, the speed is low; in his opinion, it turns out, it is simple... "there is no need for them to go out on the roads" and that is all there is to it. However, on rural roads it is possible, they will not create any jams, they say, even though the State Motor Vehicle Inspection Administration is not exaggerating. If such transport becomes bogged down, the driver without a fuss "will take it and pull it to the shoulder"--the weight is 130-150 kg.

The readers of SEL'SKAYA NOV' asked questions with regard to the use of mini-equipment in transportation operations. With what did the responsible officials of the departments, which have been commissioned to supply private plots with means of small-scale mechanization, reassure them?

From the explanations received by the editorial office it is evident that an "emergency situation" has already arisen with mini-equipment. Some questions remain open, others have been settled not in favor of private plots and require that they return to them. It is quite clear that small-scale equipment, the production of which has finally been started, should conform to the present technical level and should result in the satisfaction, and not the distress of those who will use it.

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INTENSIFICATION OF GRAIN PRODUCTION DISCUSSED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 2, Feb 84 pp 13-19

[Article by V. Shefer, sector head of the Kazakh SSR KNK [Committee of Scientific Consultations]: "The Effectiveness of Intensive Grain Production"]

[Text] At the 26th CPSU Congress it was especially emphasized that grain production remains, as previously, an area of shock labor for party, soviet and economic organizations and for all village workers. The goal that has been set is to increase grain production in the country to 1 ton per person on the basis of a growth in productivity. In meeting this goal a large contribution must be made by the farmers of the Kazakh virgin lands, which in past years were transformed into one of the largest granaries in the country. The enormous virgin grain shop in the republic has already experienced 30 years of intensive life. No one ever obtained Kazakh grain easily. Participating in its production each year are hundreds of machine operators, truck drivers and specialists in agriculture and other branches. The more difficult the struggle for the grain, the more significant and dear the victory. But in this zone farming depends on the caprices of nature to a significant degree. Droughts are a frequent phenomenon in all regions of the republic. Against their consequences farmers pit heroic labor, creativity and skilful management.

The majority of agricultural enterprises in the republic completed the transition from the introduction of individual elements of the soil conservation system to its complex assimilation. As a result there was an improvement in the general quality of agricultural management. Grain farmers began to work better with sowing material. The help of agricultural aviation in crop care has increased significantly. A non-mouldboard system of soil-cultivation has been introduced on practically all grain fields. Today virgin land farming has a serious scientific foundation. Soil conservation agrotechnology, elaborated by the republic's scientists, has enabled us to practically eliminate wind erosion of soils and to comparatively mitigate the consequences of drought. All of this has enabled grain farmers of Kazakhstan to count their results in the billions of poods of grain. In the republic as a whole in 1976-1980 the average annual grain yield comprised 27.5 million tons--an almost sixfold increase in comparison with the pre-virgin lands period. Grain procurement increased by a factor of 7 in the republic and comprised 16 million tons.

Over 300 enterprises have been selling the state over 1 million poods of grain each for many years, and some of them have surpassed the 1 million mark by a factor of 3 to 7. Almost 16 million poods of grain were sold in 1981-1983 by the Sovkhoz imeni Kozlov of Naurzumskiy Rayon, ~~Kustanay Oblast~~. This is 4.5 annual plans. During the third year of the five-year plan on an area of almost 100,000 hectares the sovkhoz produced a larger harvest than planned. In the enterprise productivity has been stable over a period of a number of years. The secret of success is simple--the quality of the grain field has increased.

On the whole the enterprises of Kustanay Oblast produced almost 12 quintals of grain per hectare each in 1981-1983. The sovkhozes and kolkhozes of Borovskiy, Fedorovskiy and Komsomol'skiy rayons produced over 14 quintals per hectare.

The enterprises of Arykbalykskiy Rayon produced 14.3 quintals of grain per hectare--the largest yield in Kokchetav Oblast. Grain yield was adequate in Bishkul'skiy and Sokolovskiy rayons of North Kazakhstan Oblast. Under difficult weather conditions the grain farmers of Ural Oblast were able to provide the homeland's granaries with 2.4 million tons of grain in 1983. Here the country received about 100,000 tons above the quota for 3 years of the 11th Five-Year Plan. Sales plans were overfulfilled for all types of grain crops. Strong and valuable wheat varieties make up over two-thirds of the grain sold. The largest contribution to the successful fulfillment of oblast socialist obligations regarding the sale of grain to the state was made by the workers of Burminskiy, Dzhambeytinskiy, Terektinskiy, Zelenovskiy and Kamenskiy rayons and the Pugachevskiy, Permskiy and imeni Gazeta PRAVDA sovkhozes.

The kolkhozes and sovkhozes of all Kazakhstan oblasts achieved considerable success during the virgin years. In 1954-1983 the republic poured about 21 billion poods of grain into the homeland's granaries. Of all these virgin years eight were billion pood years. It is not difficult to note a very interesting law. Whereas there were 10 years between the first and second Kazakh billion poods (1956-1966), during the Ninth Five-Year Plan this figure was achieved twice--in 1972 and 1973. The frequency of pouring 1 billion poods into state granaries increased during the 10th Five-Year Plan. During 5 years the only non-billion pood year was extremely dry 1977, but the results of the remaining 4 years made up for underproduction during the unfavorable year. As a result during each year of the 10th Five-Year Plan almost 1 billion poods of quality Kazakh grain were sold to the state. However, during 3 years of the 11th Five-Year Plan indicators were more modest. Unfavorable weather conditions had their effect. Nevertheless, many reserves within the branch could have been used much more effectively. The fact is that the deterioration of grain production indicators has a direct effect on economic effectiveness, and return in the branch has not only an objective but also a subjective influence on the interest of enterprises. Let us examine this problem in greater detail.

In achieving an overall increase in the effectiveness of agricultural production, the party and state are constantly concerned with raising the profitability of grain production--an important indicator of the effectiveness of the work of the grain farmer. No one should be indifferent to the expenditures required for grain production. Each ruble invested in the grain field must yield the greatest return.

An analysis shows that grain production in Kazakhstan is the most profitable of branches. It is the basis for the formation of a profit in enterprises. Thus, the sovkhoses of the Kazakh SSR Ministry of Agriculture obtained the following profits from the sale of grain: during the Eighth Five-Year Plan--1.6 billion rubles, Ninth--1.8 and 10th--about 3 billion rubles, or over half a million rubles per year. Profits were significantly lower during 3 years of the 11th Five-Year Plan. After all, there are still many unused reserves in this branch.

It is quite evident that in the soil-climatic conditions of the virgin lands a large grain harvest will not be created on its own each year. One has to know how to work, how to really work, on this soil and under this sky. In this respect the grain farmers of Kamyshninskiy Rayon, Kustanay Oblast, can be singled out. Here improvements in sowing structure are being made constantly, the proportion of fallow fields has been increased to 18 percent, the assimilation of crop rotations is being completed and only subsoil tillage methods are employed. For many years now farmers here have been harvesting 3-4 quintals per hectare of grain more than planned, and they are overfulfilling the quotas for grain sales by a factor of 1.5-2, thereby achieving a return of over 100 percent.

Persistent work is being accomplished in the area of increasing production profitability in the majority of sovkhoses and kolkhoses of Kustanayskiy Rayon of Kustanay Oblast. This work has been well-organized in the Sovkhoz imeni Lomonosov, the Sovkhoz imeni Buddenny, Borovskiy Sovkhoz and others. Let us take, for example, the Sovkhoz imeni Buddenny. The profit level for grain production in 1979-1983 comprised 104 percent here. An increase in the level of profitability occurred as a result of the reexamination of state procurement prices and the introduction of supplements as well as of an increase in productivity, improved grain quality and decreased production expenses. In 1976-1983 the rayon's enterprises received an additional 1,723,500 rubles for the quality of the grain sold and 20,467,800 rubles for the sale of hard and strong wheats. On the average the supplement for quality comprised 1 ruble 91 kopecks per quintal of grain. As a result the level of grain profitability increased by 32 percent.

In the pre-harvesting period here in each sovkhos committees on wheat quality are confirmed according to a directive by the enterprise's director. This same directive establishes the objective of organizing laboratory and brigade inspectorates usually consisting of two groups--one selecting samples, the other for analysis. As a rule, two persons helping each other are sufficient for each group. The group is allocated transportation and in one day it selects sheaves from windrows on 5-7 fields with an area of 250-350 hectares each. Other duties include threshing sheaves, the preparation of grain for



analysis and participation in determining the less difficult indicators such as weed infestation, weight of 1 liter of grain, glassiness and others. Later samples are taken from storage piles on the threshing floor and from machines sent to grain-reception points. The laboratory is secured with all the essentials--equipment and facilities for analyzing the samples. The analysis group includes people who are qualified to determine gluten content and other indicators of grain quality.

The Kustanay system calls for three determinations of grain quality. The first of these is preliminary—it occurs in the field and on the threshing floor, which enables workers to avoid accidentally-mixed grain and to combine qualitatively similar batches into large ones for daily delivery. In the second and basic determination one establishes the actual quality of grain which has undergone processing after a specific period on the threshing floor. The control or third determination for self-control as well as to check the correctness of the grain evaluation by the laboratory of the grain-reception point. The extensive utilization of this system in each enterprise of the republic is an important reserve for increasing the procurement of high-quality grain and for increasing production effectiveness.

Logically matters appear to be simple, but in actuality they are even extremely complicated. The problem is that the more difficult it is to produce grain, the cheaper the price at which it is sold by enterprises. The existing order for grain procurement from agricultural enterprises is such that procurers, expending 35-50 kopecks to process 1 quintal of infested and moist grain, raise the sales price for themselves by 4-6 rubles. For each point counted off they allow 15 percent for moisture and 1 percent for weed infestation. The weather conditions of 1983 did not allow the majority of enterprises in Kustanay Oblast to submit grain with such indicators. With a moisture content of 19 percent and more the elevator, according to existing GOST standards and instructions, has the right not to accept such grain from an enterprise. The allowable exceptions for a bad weather year ease this problem only slightly. After all, last year a great deal of grain from combines had a moisture content of 23-25 percent and more, with rubbish sticking to it. Undoubtedly, the protein in it is slightly dissolved. But after drying and cleaning the quality initiated by grain farmers is restored and fully meets the requirements for virgin strong and durum wheats, but not for their producers but for those who procured them. Herein lies the basic injustice in the labor of the grain farmer. It can be eliminated completely.

Calculations of the rayon agricultural administration of Kustanay Oblast show that the working up of 1 quintal of grain on sovkhos threshing floors without drying cost 22-25 kopecks in 1983, whereas in elevators of grain-reception points cleaning together with drying cost 3-6 kopecks. Here equipment is more productive and work technology is more perfected. If we also consider the enormous quantity of grain that finds its way into the waste piles of threshing floors of kolkhozes and sovkhoses, then it becomes necessary to solve the problem of who must be involved in the drying and preparation of grain.

It would be most advantageous for the national economy for procurers to be in charge of this. Here are just a few figures. In Uritskiy Rayon there are 103 sovkhos and kolkhos threshing floors having a total value of 2.5 million rubles. There are about 500 mechanics, fitters and technologists alone, not counting other workers, allocated for these floors. Annual expenses for all threshing floors in the rayon exceed 0.5 million rubles. It is less expensive to ship grain from fields to the elevator without these transfer points, but again GOST and directives stand in the way.

In recent years there has been unlawful increase in losses on grain fields due to grain refaction. On the whole in 1976-1983 due to grain refaction profitability levels in production decreased by 1.8 percent.

The drop in grain prestige is an acute signal concerning the fact that the solution of the grain problem is becoming more difficult as well as of the fact that the economic possibilities of enterprises are deteriorating. Thus, during the Ninth Five-Year Plan each ton of grain sold provided the republic's enterprises with an average of 37 rubles in profits, during the 10th--51, and in 1981-1983--only 39 rubles. Meanwhile, the level of procurement prices for grain increased by 36.4 percent in the analyzed period. But expenditures per hectare of grain crops more than doubled and now reach an average of 94 rubles. The cost of 1 quintal of grain equalled an average of 7.18 rubles during the Ninth Five-Year Plan, 7.56 during the 10th and 8.46 rubles in 1981-1983.

Among the complex of measures to strengthen the economy of grain production in the republic should include the urgent question of further improving differentiation of procurement prices for all types of grain, especially wheat. As a result of its imperfection many of the republic's sovkhoses and kolkhoses cannot achieve stable profits in grain production. Worse than that, of the 89 chronic unprofitable sovkhoses 11 percent are specialized grain enterprises. Some of them are located in zones of risky farming. It is characteristic that the quantity of mineral fertilizer introduced per hectare of plowland comprised 6-9 kilograms in them, as compared to 28 kilograms in profitable grain sovkhoses. A similar relationship is maintained with the application of organic fertilizer and with the use of poisonous chemicals and herbicides. No matter how odd, the main reason for such a situation can be found in the lack of stability of the financial payment capability of unprofitable and low-profit grain enterprises. This also affected the turnover of cadres. In every economically-weak grain sovkhos it is 18-20 percent higher than in stable, profitable enterprises. In 1979-1983 in one economically-weak grain enterprise there was an average shortage of 76 permanent workers, including about 43 tractor operators-machinists.

In addition to improving differentiation in procurement prices within the limits of enterprises, rayons and oblasts it is essential to achieve the full utilization of the stimulating function of prices to increase production and improve grain quality. Calculations show that to solve these and some other problems on bringing order to and utilizing procurement prices for grain it will be necessary to have 160-170 billion rubles of supplementary monetary resources for implementing the planned procurement volume for 1984. This

requires a thorough, scientifically-based correlation of all factors for the maximal use of reserves of Kazakhstan's grain fields and a levelling-out of the economic conditions of management.

According to the generalized indicator of economic effectiveness--the level of profitability of marketable grain--a stable growth from one five-year plan to the next has not been achieved as yet. On the contrary, this indicator is decreasing. Thus, during the Eighth Five-Year Plan the profitability level in the republic's sovkhoses comprised an average of 56.6 percent; during the Ninth and 10th--about 50 percent. During the 3 years of the current five-year plan there was even somewhat of a decrease in the profitability of grain production. Still greater fluctuations and even a drop in economic effectiveness were observed during the billion-pood years, when the conditions for cultivating grains were to some degree uniform in all republic oblasts.

An analysis shows that in the pre-virgin lands period (1953) in the republic the area in grains comprised somewhat over 7 million hectares, productivity--7.7 quintals per hectare, gross yield--5.4 million tons, and grain sales to the state--148 million poods, with a marketability of 44.1 percent for grain products. Three years later, when Kazakhstan delivered 1 million poods of grain to the state for the first time, all of these indicators had improved. During 3 years the area in grains increased by a factor of 3.1, productivity increased to 10.6 quintals per hectare and the level of profitability for the first billion poods of grain equalled 53 percent, whereas during pre-virgin lands years this production was primarily unprofitable.

During the first year of the Eighth Five-Year Plan (1966) after a series of measures taken in accordance with the decisions of the March 1965 Plenum of the CPSU Central Committee, the homeland received its second Kazakh billion poods of grain. The level of profitability for grain produced was 92.6 percent. Grain sales provided 623.5 million rubles in profits. The profitability of the third billion poods of grain (1972) and of the fourth (1973) decreased somewhat because of a significant increase in expenditures in grain production, equalling 88.7 and 60.2 percent respectively.

The general indicator of economic effectiveness--profitability level of grain production--turned out to be the highest with the fifth Kazakh billion poods of grain (1976)--93.6 percent. The profitability level for the sixth billion poods (1978) decreased to 61.3 percent, which was almost 10 percent lower than the union indicator. Here there was an implication to a significant degree of the consequences of the severe 1977 drought, when some enterprises in the republic were not themselves able to meet their own needs as concerns high-quality seed.

The struggle for the seventh Kazakh billion (1979) was crowned with still another great success, both in the volumetric as well as economic sense. A record quantity of grain--1,262,000,000 poods--was delivered for the first time. The profitability level of the grain field increased to 67.8 percent. Nevertheless, this indicator remained 25.8 percent lower than that achieved in the beginning of the 10th Five-Year Plan (1976). The profitability of the eighth Kazakh billion (1980) again decreased significantly and hardly reached 40 percent. During 3 years of the 11th Five-Year Plan (they are not included in the billion-pood years) this indicator has remained at practically the same level.

increasing income from grain is the curtailing of production expenses per unit of production. The growth of these expenditures in the course of a long period can be explained to some degree by the fact that during the Eighth Five-Year Plan 36 percent of this growth was due to changes in wage payments and 44 percent--to changes in the evaluation of material resources. During the Ninth Five-Year Plan within the total increase in expenditures these indicators equalled 27 and 58 percent respectively; in the 10th--19 and 63 percent. Moreover, expenditures increased as a result of the revaluation of fixed capital and of changes in the standards for amortization deductions. During this period and 2 years of the 11th Five-Year Plan there was also an increase in the prices for agricultural products, and for seed in particular. There was a significant increase in the cost of enterprises' own seed. All of this could not but have a negative effect on the economy of grain production.

Progressive technology and a high level of agrotechnology, as practice has shown, can considerably mitigate the negative consequences of a growth in production costs. Since the beginning of assimilation of the virgin lands the agricultural system has withstood radical changes. From the mouldboard cultivation of soil enterprises have made the transition to a soil conservation system. Fertilizers are used widely. Special attention is given to measures of combatting drought, accumulating moisture in the soil to a maximum and its more economic use. A transition is taking place to a planned system of soil cultivation in fallow--grains crop rotations with a short rotation, which will facilitate protecting the soil against wind erosion, increasing the productivity of grains and decreasing the cost of production.

As an analysis showed, the cost of grain in enterprises that widely employ a soil conservation system of farming on all areas turned out to be much lower and the productivity of labor--much higher than in enterprises where the new technology was utilized on an area no greater than 20-25 percent of the plowland. The use of soil conservation measures is accompanied by a decrease in the expenditure of labor and monetary resources per hectare of crops. Counter-erosion technology is more productive and less metals-intensive than mouldboard equipment. The introduction of a soil conservation farming system in steppe and arid steppe zones enables us to achieve an economic effectiveness which according to calculations equals 98.7 million rubles.

A guarantee, tested in practice, for curtailing expenditures per unit of production, involves more thorough specialization and a strengthening of concentration of the entire grain area. A grouping of sovkhozes according to their level of specialization shows that the proportion of marketable grain, in total value of products sold during the more favorable 1979, was 60 percent in 545 sovkhozes of 619 specialized grain sovkhozes, 40-60 percent in 331 sovkhozes and 20-40 percent in 282 sovkhozes. The majority from the last two groups of enterprises are located in the grain region of the republic but are multi-branched in nature. In grain sovkhozes where the level of specialization surpassed 60 percent the level of profitability equalled 82.3 percent. With a 20 percent specialization in grain production the profitability of grain was lower by a factor of 2 and the cost--higher by the same

factor. In enterprises where the level of concentration of the grain field is still lower the economic indicators do not withstand any sort of criticism. In 1982 and 1983 this tendency appeared in a form of even greater contrast. Until now over 300 sovkhoses producing marketable grain have had a total area of grains of almost or slightly more than 6,000 hectares. In 1979-1982 their productivity comprised an average of 6.9 quintals per hectare, labor expenditures per quintal--2.34 man-hours and the cost of 1 quintal of grain--about 15 rubles. Moreover, in one-third of these sovkhoses the given indicator fluctuated from 12 to 46 rubles. All of this speaks of the unexhausted possibilities for decreasing costs for the production of a unit of Kazakh grain.

Intensification in grain production is characterized above all by an increase in the use of the means of mechanization, chemization, electrification and reclamation and by the introduction of more productive crop varieties and the achievement of science and practice. New and improved production equipment is coming to the aid of grain farmers. It allows them to increase productivity by a factor of 1.5-2 and to curtail labor expenditures by 25-35 percent. The complex mechanization of grain production, especially grain harvesting, is being developed. With the securing of the material-technical base there was an improvement in the quality of farming--there was an improvement in the quality of soil cultivation and of sowing with a simultaneous curtailment of work periods. The plowing of late-fall plowed fields in optimal time periods enables farmers to raise grain productivity by 2-4 quintals per hectare and to noticeably curtail the volume of spring field work.

Numerous examples of the work of kolkhozes and sovkhoses show that in places where work with the soil is done well and scientifically, where its fertility is improved in a planned manner and where agriculture is managed with stability, they produce a good harvest in any year and also achieve a high return for the branch. Deserving of practical support is that system of farming, those crop rotations, that crop structure and that system of soil cultivation which under specific given conditions secures the best end results and the fulfillment of plans established by the government not by means of expanding crops, i.e. the extensive factor, but rather by means of intensification, and primarily by increasing productivity.

Any agronomist knows that achieving large yields with low expenditures is possible only with the implementation of the entire system of agrotechnical measures, among which the most important is improving seed farming. In order to manage seed farming USSR Sortsemprom [Varietal Seed Raising Production Association] was created, and in republics and oblasts--over 100 varietal seed raising associations. There was a significant expansion in the network of specialized seed-farming enterprises. Working effectively are scientific-production associations, which are now being given primary importance.

For example, in Borovskiy Rayon of Kustanay Oblast special attention is given to seed material. Here each year 94 percent of the seed fulfills the requirements for first and second class. In addition to the regionalized varieties of wheat--Saratovskaya-29 and Bezenchukskaya-98--new varieties are



being introduced--Ural'skaya-52, Mironovskaya, Kurganskaya and Saratovskaya-46. There are high-yield barley varieties--Donetskiy-8 and Karabalykskiy. The efficient coordination of seed farming and the crop rotation system is one of the most important factors in intensifying grain production. Here the condition of each field and its potential strength are known. In the enterprises of Borovskiy Rayon an analysis was made of the dynamics of productivity in grains over a 17-year period using all predecessors and all methods for primary soil cultivation and for the application of fertilizer. An analysis was also made of the degree of weed infestation of plowland and the level of productivity of wheat sown on fields where there was no primary soil cultivation for 1-4 years and more. Supported by this research, the most different variants are used for sowing this crop and cultivating the soil. Let us say that the field is weed infested. It is allowed to lie fallow if according to crop rotations its turn has come to do so, but an open field is left in stubble. It is true that in this case the necessity arises to increase the area of fallow in another crop rotation. In other words, the types of crop rotations are retained within limits, but divergences are boldly tolerated in their structure and in the alternation of crops, which are reestablished in subsequent years. Such manipulation allows us to raise the level of the return on a grain hectare by 14-18 percent.

An important reserve for increasing the return on the grain field is the rapid and high-quality completion of sowing. The farmers of Borovskiy Rayon complete pre-sowing cultivation using KP-23.8 cultivators to the depth at which the seed will be laid. This is mandatory. For sowing the sector is fully prepared, then SES-2.1 sowers with teeth move at right angles to the line of cultivation. The sowing rate is 2.3-3.2 million germinated seeds per hectare depending on the potential possibilities of each sector to develop the optimal density of crops during the harvest period--4-5 million plants per hectare with an average of 22-26 grain per ear. The biological productivity in this case equals about 22-25 quintals per hectare with a decrease in normal expenditures of 12-17 percent.

It is necessary that the progressive experience of enterprises in which a yield of 20 quintals per hectare has become routine find its way to the fields of all oblasts in Kazakhstan. Here we must not forget that even on highly fertile soil, as the long-term experience of Kustanay workers showed, it is not possible to produce a good harvest from a low-productivity variety. Not only do we need new and more productive varieties of grain crops that are adapted to the severe local conditions of Kazakhstan, we also need supplementary investments, especially of fertilizer.

Intensive varieties differ from regular, often less demanding varieties, in that they are very responsive to fertilizer--mineral as well as organic. The basic guarantee of high productivity is an adequate level of soil fertility, developed and maintained via the intensive and comprehensive use of organic and mineral fertilizers and soil reclamation chemicals in mandatory conjunction with the extensive use of means for plant protection, growth regulators and other chemical and biological preparations.

An analysis shows that enterprises that are closer to supply bases often receive much more fertilizer than do distant enterprises. The latter are usually supplied with fertilizer in a volume that is significantly lower than that ordered and in a less satisfactory assortment. At the same time care must be taken with regard to the arguments of some directors and specialists who try to explain low harvests by shortages of mineral fertilizers and poisonous chemicals and by the absence of high-yield, intensive and economically-profitable varieties. All of these factors undoubtedly are very important, but if nongrade seed is sown in enterprises each year, especially on fields plowed in the spring and with schedule violations, not a single one of these factors will yield the desired result. After all, practical experience and scientific research of virgin fields long ago provided that the productivity of the grain hectare and its economic return depend on weather by only half, and on technology, farming quality and the level of work organization for the remainder.

A large role in the introduction of flow-industrial production methods, of progressive technology and of an efficient organization of labor belongs to the introduction of a progressive method for the complex use of agricultural technology in harvesting. The Ipatov method, used with a consideration of local conditions, has been widely disseminated.

As we know, in recent years Kazakh farmers have participated in the development of a number of intensive methods to organize the transport servicing of large harvesting complexes. All virgin lands oblasts widely utilize the so-called portion method for unloading grain in which the combine unloads the bunker into a vehicle body awaiting it at the edge of a plowed strip regardless of how much grain is in the bunker. The goal is the same as with the combined trailer method--in the shipment of grain to utilize fewer motors and more vehicle bodies so that combines do not remain idle while waiting for trucks and so that vehicles do not run back and forth when not fully loaded. The advantages of this method were quickly recognized in Ural Oblast. In 1983 it was used here in the majority of grain enterprises. A large number of trailers was used supplementarily. According to a decision by the party obkom they were taken from departmental transportation enterprises of city enterprises and sent to the village in good time.

In sovkhoses having a sufficient quantity of powerful tractors, the stationary-exchange method of grain transportation, first used in Tselinograd Oblast, has been found suitable. The tractor operates with two hitches and a pair of carts, which are placed in places that have been marked in advance as those in which combines will most likely be unloaded; from there grain is moved to the threshing floor by turns. In the experimental sovkhoses of the VNII [All-Union Scientific Research Institute] of the Grain Industry imeni S. Seyfullin and imeni KazTsIK [Kazakh Central Executive Committee] two K-700 tractors manage the shipment of grain from 11-14 combines. The new method has demonstrated great advantages as compared to small-link methods, enables farmers to concentrate the work of brigade combines on one field, in one area, and eases all forms of services. The conditions for work organization are simplified. In addition, land is freed more rapidly for cultivating soil and there is a simplification of accounting with regard to the harvest on

individual fields and of labor organization on the threshing floor. Most importantly, the productivity of transportation vehicles increases by a factor of 10-15 and of combines--by 15-25 percent and more. There has been an increased effectiveness in the use of K-700 type tractors and their series of equipment. During the busy harvesting period it was no longer necessary to recruit transport vehicles from industrial and other enterprises. There was also a 13-16 percent curtailment in the expenditures for grain shipments as compared to the norm.

Intensification and increasing effectiveness of production processes compels us to look at a great deal in farming in a new way, from the position of the needs of today as well as of the future. Let us say that in zones with insufficient moisture the non-mouldboard system of soil cultivation is being more and more widely recognized. Its advantages are apparent--there is an increase in the productivity of the tractor fleet, agrotechnical schedules are adhered to more strictly and the soil retains moisture better, which in the final analysis is translated into a larger harvest. However, to introduce the non-mouldboard system desire alone, even the most fervent, is insufficient. Sweeps, a complex of auxiliary equipment and stubble sowers are required.

Or, let us take a problem that also has a direct relationship to the grain field. We are speaking about the practice of operating the K-700 tractor that has developed in steppe Kazakhstan and probably in other regions. The wheeled giant, especially with the proper series of machines, undoubtedly is deserving of the good reports. But there is hardly a reason to impart it with universal functions. It works well for hauling and plowing if the soil is dry. It cannot sow--on about 15 percent of the area the soil turns out to be packed. Nevertheless, during the sowing period K-700's are "running around" on all the fields, frequently not loaded, thereby increasing expenditures per hectare. There is no room for zeal here. As for fallow, it is undesirable to allow this wheeled heavyweight on it not only for technological but for purely economic reasons as well.

The republic's grain farmers can see well the great work directed at the further development of grain production being performed by the CPSU Central Committee, the Central Committee of the Kazakh CP and the republic's government. But in order to have a more substantial return from these measures it is essential to give significant attention not only to organizational but also to economic aspects of all processes for intensifying the republic's grain fields.

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## TILLING AND CROPPING TECHNOLOGY

### FACTORS BEARING ON THE EFFECTIVENESS OF FERTILIZER APPLICATIONS

Moscow SEL'SKAYA ZHIZN' in Russian 29 Mar 84 p 2

[Article by L. Derzhavin, director of the Central Institute of Agrochemical Services to Agriculture(TsINAO), and Sh. Litvak, chief of the laboratory: "Effective Utilization of Fertilizer"]

[Text] Technological Discipline--Harvest Insurance

Every grain farmer is well aware of the importance of the role of fertilizers in increasing crop yields. However, the greatest effect can be achieved from fertilizers only at a high level of agrotechnology and through strict adherence to technological discipline. The importance of a comprehensive approach to this critical subject is especially great at the present time.

Special attention must be paid to proper applications of nitrogen fertilizer top-dressing on winter grain crops. Fall of 1983 weather conditions (high temperatures) led to a build-up of significant levels of nitrogenous minerals in the soils of a large part of the Chernozem zone, as well as in many oblasts of the Non-Chernozem zone. Fractional application of nitrogen fertilizers is recommended for better utilization of crop potentials in the process of developing the harvest and reducing wasteful losses of nitrogen. Top-dressings must be made during the tillering stage, the shooting stage(formation of first and second internodes), and at the end of the heading stage(in regions harvesting strong and valuable varieties of wheat). The first top-dressing supplies no more than 30 percent of the annual nitrogen requirement. First priority for fertilizer top-dressing is given to underdeveloped croplands.

Correlation of the data from field surveys conducted by the TsINAO has revealed that virtually all stands of grain crops are weed-infested, which can result in a significant reduction in yields and fertilizer effectiveness. The method of simultaneously applying fertilizers and herbicides--which not only provides maximal effect, but also significantly reduces costs--therefore takes on special importance. For example, the broad application of granulated 2,4-D butyl ester mixed with ammonium nitrate is recommended for use against over-wintering annual weeds in the central region of the country as the springtime top-dressing to winter crops.

Root-zone application of nitrogen fertilizers to a depth of 3-5 centimeters is recommended under conditions of moisture deficit and normal planting density of winter crops. In the southern regions of the country, on soils with low levels of available plant nutrients, nitroammophos can be used for root-zone top-dressing, while in the Non-Chernozem zone, nitroammophoska can be used (in situations where phosphorus and potassium fertilizers have not been applied since the previous fall).

The wide-scale use of diagnostic methods must be adopted to correctly establish the nitrogen dosage for fertilizer top-dressing. Last year, diagnostic techniques for determining mineral nutrient requirements of winter grain crops were carried out in 96 krais and oblasts of the nation over an area of 11.8 million hectares, while the agrochemical service is currently planning to conduct such operations on as much as 12.7 million hectares.

The Krasnodar, Stavropol, Rostov, Moscow, Kaluga, Lipetsk and other agrochemical research stations have had the most success in introducing diagnostic methods for determining mineral nutrient requirements of winter crops. The stations and agrochemical laboratories of Moldavia, the Ukraine and the Baltic Republics have also shared in this success. The correlated data indicate that the introduction of diagnostic methods has increased the effectiveness of nitrogen fertilizer applications by 15-20 percent.

At the present time, in the Lipetsk, Tambov, Moscow, Ivano-Frankovsk oblasts and the Krasnodar and Stavropol krais, a scientific-industrial experiment is underway on the use of intensive technology in the cultivation of winter wheat. It is very important now to conduct diagnostic surveys on these croplands to determine mineral nutrient requirements so as to facilitate more efficient utilization of the higher dosages of nitrogen fertilizers and to avert possible lodging of plants. Retardants should be more widely employed to prevent lodging (chlorocholinechloride on winter wheat, and campozan-M on winter rye). These provide additional yields at harvest of 2-5 quintals of grain per hectare. Croplands are treated with retardants during the tillering stage of winter grains, and it may be combined with applications of herbicides of the 2,4-D group.

An important role in grain production is now being played by summer crops, which also show a strong response to applications of fertilizer. In the Non-Chernozem zone, on soddy podzolic soils, applications of a complete range of fertilizers to summer barley provides the most impressive effect.

In the forest-steppe zone of the European part of the nation, the application of fertilizers to summer grains provides an average increase in yields at harvest of 6-8 quintals--for corn, 10-15 quintals--with a return of 4.0-4.5 kilograms of grain per kilogram of active substance of fertilizer. Mineral fertilizers yielded the strongest effect on stands of summer grains in the western and right-bank [of the Dnepr] oblasts of the forest-steppe zone of the Ukrainian SSR, in the Moldavian SSR, and in the wetter regions of the northern Caucasus. Despite the relatively high level of natural fertility present in podzolized, leached and typical chernozems under present conditions, the greatest increase in summer grain yields is achieved with applications of a complete mineral fertilizer. As a matter of fact, when the grain plantings are designed to follow sugar beets receiving a high dose of fertilizers, a normal harvest can be obtained with a bare minimum of fertilizer.



An important point to consider is that excessive applications of nitrogen fertilizers, especially on soils deficient in phosphorus, leads to lodging and retards ripening of summer grain crops, which of course results in a significant reduction of harvest yields.

All stands of summer grains must receive a row application of granular superphosphate at the rate of 10-15 kilograms of active substance per hectare. Long-term practical experience of farms confirms that a side-dressing of fertilizer increases the resistance of grain crops to spring frosts, pests and diseases, and provides an increase in yield at harvest averaging 1.5-2 quintals.

One of the most important reserve capacities for increasing grain production is the use of fertilizers on clean fallow. According to data from field tests conducted by the Geodetic Network of VIUA [the All-Union Institute of Fertilizers and Agricultural Soil Science] imeni [D.N. Pryanishnikov], the application of 50-60 kilograms of phosphorus fertilizers per hectare to fallow land, under conditions found in Siberia and northern Caucasus, provides a summer grain harvest, assuming favorable weather, on the order of 25-30 quintals. This is due to the fact that, on fallow land, the build-up of mineral nitrogen compounds in the soil necessitates above all the application of phosphorus fertilizers.

Clean fallow is the most convenient place for broad-scale agrochemical treatment of fields. Here, more than anywhere else, it is necessary to employ organic fertilizers, chemical reclamation agents, and ground rock phosphate (on acid soils).

Matching up the amount of work on broad-scale agrochemical treatment of fields to the level of chemical treatment of each specific farm is one of the most important preconditions for the highly efficient utilization of fertilizers. With a low level of chemical treatment, fertilizers should be viewed as a means of controlling plant nutrient levels, where other factors (agrotechnical capabilities, phytopathological control, etc.) are limiting. Given the limited supplies of water-soluble phosphorus fertilizers, they must necessarily be employed on a priority basis within quotas designed to ensure planned harvest levels. Quotas of nitrogen and potassium fertilizers should provide for balanced nutrition of agricultural crops and produce a harvest of good quality. When this is the case, the highest return is realized from applied fertilizers.

Mineral fertilizers and other means of chemical treatment must be earmarked--fully in accordance with programmed harvest objectives, agrochemical collation charts, and levels of agrotechnical capacity--for all crops grown under industrial technology. Wide-ranging chemical treatment reveals its possibilities more fully against a background of utilization of the best varieties, a high agrotechnological level of soil preparation, and advanced planting techniques. Harvests of agricultural crops grown under industrial technology, even during years with unfavorable weather conditions, are 35-40 percent greater--for certain crops, 50-60 percent greater--than with the use of traditional agrotechnology.

In this regard, special emphasis should be placed on the banding method of fertilizer application. This allows a reduction in fertilizer quotas of 30-50 percent in comparison with the broadcast method, without reducing harvest yields. The

application of fertilizer in bands calls for the putting together of USSR Goskomsel'khoztekhnika equipment units based on the RUM-5 and RUM-8 [mineral fertilizer spreaders] machines and the KShP-8 [rod cultivator] employing spring-operated tools.

Farming reliability and fertilizer effectiveness are determined primarily by the level of agrotechnology in force. On farms characterized by substandard operations, the recovery of fertilizer expenses is down quite sharply. It has been established by practical, as well as foremost experience that fertilizer effectiveness increases 15-20 percent when combined with crop rotation, 20-30 percent when combined with the use of highly productive varieties, and 15-30 percent when combined with observance of optimal plant spacing. Liming of acid soils increases the output of fertilizers directly by 30-50 percent.

Despite the fact that the currently established quotas of mineral fertilizers can, with strict adherence to technological discipline, provide an increase in yields at harvest averaging 35-40 percent, there are still far too many farms in the country employing substandard farming operations which result in reduced effectiveness of fertilizer utilization. If the spring period is to see an increase in the level of these operations, considerable attention must be paid to the quality of fertilizer application.

Tests conducted by the TsINAO, in conjunction with other scientific research facilities, demonstrate conclusively that the harvest shortfall resulting from nonuniform application of fertilizers to barley totals 2.1-3.5 quintals, and to winter wheat--4 quintals. With this in mind, one sees the need to carefully control application machinery, to establish the optimal effective width of application in each specific case, to thoroughly instruct machine operators, and to implement continuous control over the quality of their work.

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## TILLING AND CROPPING TECHNOLOGY

### ACTION TAKEN TO EXPEDITE DELAYED FERTILIZER SHIPMENTS

Moscow SEL'SKAYA ZHIZN' in Russian 7 Apr 84 p 2

[Follow-up commentary by S. Dorokhin, deputy minister for mineral fertilizer production, on 6 Mar 84 lead article "For the Growth of Harvests"]

[Text] The Ministry for Mineral Fertilizer Production has reviewed the lead article "For the Growth of Harvests" published in the 6 Mar 84 issue of SEL'SKAYA ZHIZN'. It was correctly pointed out in the article that certain enterprises are delaying shipment of mineral fertilizers and liming materials to the farm sector of the country. The directors of the Rossosh chemical plant, the Tol'yalliazot production association, the Balakovo chemical plant, as well as several other enterprises have been issued orders with regard to expediting fertilizer shipments, and unconditionally maintaining fertilizer supplies according to plan. The laggard enterprises in question have been taken in hand by responsible authorities within the ministry.

The shipment of liming materials to the farm sector from the Rozdol Sera production association is being delayed only as a result of the shortage of transport vehicles. The warehouses of the enterprise are currently holding in storage 1.2 million tons of material ready for shipment.

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## FORESTRY AND TIMBER

### PROBLEMS OF TIMBER EXPLOITATION EXAMINED

#### Rational Use of Resources

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 May 84 p 1

[Article by I. Leshchevskiy, editor of the newspaper for the division of the light and food industry: "From the Stump to the Top"]

[Text] Our country's gigantic expanses -- almost 730 million hectares -- are covered with forests. The supplies of timber in them amount to 84 billion cubic meters. An immense wealth. Yet each year we experience a more critical shortage of railroad ties, mine supports, lumber, and scraps for pulp and paper combines. How does one explain this paradox?

The fact is that a large part of our population is concentrated in the European part of the country, where a large industrial potential has been created. As a result of intensive exploitation, the forests here have become considerably sparser and many of them have been made into special nature protection zones. In order to obtain timber, procurement workers are having to move farther and farther to the east and to the north. But the creation of new enterprises in uninhabited regions requires half again the amount of capital investments. And the transportation of round timber from the Asian part of the country to the European part is not inexpensive either. Thus a cubic meter of timber shipped in from Siberia, say, to Gorkiy or Ryazan Oblast costs approximately twice as much as timber that is procured locally.

As you can see, the oblast is faced with many difficulties today. It is largely for these reasons that the capacities of procurement enterprises of the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry have decreased by almost 5 million cubic meters in recent years.

Where is the solution?

It consists primarily in utilizing the wealth of our friend the land more efficiently, completely and intelligently.

What do many procurement workers take from the trees? Only the trunks. A the branches and twigs and tops remain on the felling area. During a year

they abandon no more or less than 30 million cubic meters of these logging scraps.

But the losses only begin here. From the lower warehouses the felled trees, or simply the logs are sent to the sawmills or wood processing plants. Here some of them are transformed into boards, and some of them into offcut timber, laths, chips and sawdust. Around timber processing enterprises 66 million cubic meters of such wastes are still being formed.

Specialists regard approximately half of all this wealth as economically accessible. That is, it could be processed with a profit. It could be used to manufacture industrial chips for paper and cardboard factories, chipboard and fiberboard slabs, and various goods for household use. Finally, it could be sold to the population and used for fuel.

So far the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry is using only 30 million cubic meters of these economically accessible resources. And the other departments which engage in the procurement and processing of timber use much less. The USSR Ministry of Light and the Food Industry, for example, finds uses for 5 percent of the wastes.

Is it really necessary to prove that this kind of utilization of our wealth of greenery is inefficient and extravagant. We must sharply change our attitude toward our timber resources. A tree contains nothing superfluous, unnecessary or useless. We must arrange our work in such a way that on the felling area there remains, as thrifty masters say, only the sound of the falling tree, and in the shops -- only the noise of the saws and other equipment. Everything else should be put to work.

There is a large amount of difficult work to do. But it -- and this should be emphasized -- is not beginning from a standstill. The branch has accumulated a good deal of experience in economical, comprehensive utilization of our timber wealth.

Our newspaper has repeatedly discussed the innovative undertaking which originated in Ivano-Frankov Oblast. At one time there were 80 logging enterprises, sawmills and wood processing plants, and furniture factories of various departments as well as nine forestry farms there. More than 20 years ago they were joined together and formed 12 complex enterprises -- timber combines. They are masters in the forests as grain growers are on the fields. They prepare the soil and plant the trees themselves, they gather the crop themselves and they process it themselves. Thus they have eliminated the gap between felling and planting trees. The slopes of the Carpathians, bare at one time, have turned green with trees. And 96 percent of the procured timber is used. Each cubic meter of it produces not 64, as previously, but 224 rubles' worth of products. There has been a considerable reduction of management personnel.

Following the example of the Ivano-Frankovsk workers, in Sverdlovsk Oblast they have created an experimental complex establishment on the basis of the



Bisert timber industry enterprise. Procurements here are carried out very intensively, but nonetheless the raw material base is improving.

The advantages of the new method are obvious. But in the system of the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry has created only 35 of these complex enterprises. If things were to continue to progress at these rates, one could not expect mass assimilation of the experience of the Ivano-Frankovsk workers until long after the year 2000. The dissemination of the new is impeded by the departmental position and the exclusively local interests of certain managers. This includes the USSR State Committee for Forestry system as well.

But the task of comprehensive utilization of our wealth of timber cannot be reduced to structural changes. It requires initiative and extensive creative search from all party, trade-union and economic leaders at various stages of the procurement and preparation of timber. This is shown by the experience of the Yugmebel' Association. Here they carefully investigated the quantities and kinds of timber wastes that are being formed not only in their own, but also in other ministries and departments. The figure turned out to be considerable -- 350,000 cubic meters. The furniture workers conducted a technical re-equipping of certain shops, created new sections, and installed felling machines. And today practically all the raw material resources are processed.

But this situation exists far from everywhere. Comprehensive utilization of raw material is being disseminated slowly in the majority of regions of the Russian Federation. There are capacities for processing wastes here too. But only 70 percent of them are utilized. Yet mountains of timber wastes have accumulated at the enterprises. And the pulp and paper and other processing combines do not have enough raw material. This situation can be explained by nothing other than inadequate attention on the part of managers to this important problem and the sluggish activity of engineering and technical personnel.

Leaders of the USSR Ministry of the Timber, Pulp and Paper, and Wood Processing Industry, the State Committee for Forestry and local party and economic workers still have a great deal to do in order to disseminate and introduce comprehensive processing of timber.

But the solution to this problem does not depend on them alone. Loggers, timber procurement workers and wood processing workers need modern technical equipment. They are waiting for the Ministry of Construction, Road and Municipal Machine Building, the Ministry of the Machine Tool and Tool Building Industry and the Ministry of Chemical and Petroleum Machine Building in particular to produce domestic equipment for mechanization of timber procurement work and for shops with small and medium capacities to produce wood slabs and nutritive yeasts, mobile machines for procuring and processing small timber wastes, and other items.

Workers of the USSR Gosplan and the USSR Gossnab should be thinking about system indicators and methods of stimulation which would provide a greater

incentive for procurement workers and wood processors to utilize felling scraps and wastes from production.

All this will make it possible to reduce the demand of the national economy for timber and to better preserve and utilize our wealth of greenery.

### Irkutsk Timber Industry Concerns

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Jun 84 p 2

[Article by Ye. Kudryashov, chief engineer of the Irkutsklesprom all-union association: "What the Siberian Forests are Rustling About"]

[Text] The concern for the fate of the Russian forests is such that, regardless of which form it may take, it is never exaggerated. We have too great a responsibility for and also an attachment to our forests and groves, the boundless taiga, which upon checking turned out to be far from boundless.

For a long time the discussions were mainly about the European forests. But when the Siberians began to engage in the polemics, many people were frankly puzzled: is there really any cause to sound the alarm about your forests?! Yet the hydro-electric stations of the Angaro-Yenisey cascade alone flooded and removed from the active list tens of millions of cubic meters. And this timber could have been put to good use. A large part of the authentic ship-building pines disappeared under the water. In its zeal for "report-intensive" objects, the USSR Ministry of Power and Electrification did not manage to deal efficiently with these immense timber supplies. Perhaps they did not manage to because to many people these appeared to be free, as though nature had not worked on them for centuries.

Sometimes when you take guests to Baykal via the familiar Irkutsk-Slyudyanka road, your attention involuntarily turns to the "green sea of taiga" of the songs.

"And such beauty is under the axe," the guest sighs, not believing, in the first place, that it took the efforts of the entire country to keep the forests near Baykal from being felled. Actually, in the past there were quite a few large timber enterprises in operation along the present tourist road, and they regularly overfulfilled their plans. The commercial timber came to an end, the timber industry enterprises moved to new places, and nature, confident and strong, healed her wounds. The Baykal slopes were covered with new forests. The overmature timber long ago went under the axe, clearing a place for the young taiga plants. Incidentally, in Irkutsk Oblast alone there are almost 6 billion cubic meters of overmature timber. And we take away only 32-33 million cubic meters a year -- no more.

Briefly, today it is not a question of whether to fell or not to fell our trees. We cannot live without trees, and this is not just in the poetic sense. It is something else to discuss the price at which we are felling trees today, how to "tame" the taiga optimally and painlessly as possible, so as not actually to subdue it for many years. And here arise many questions which require immediate intervention. And not just by man with an axe and a

today we are not operating carefully enough in the taiga.

million cubic meters of timber a year, even today is shipping in raw material from the distant Krasnoyarsk and Khabarovsk krais. And in Lesosibirsk (Krasnoyarsk Krai) which neighbors Bratsk, wastes from mills are carried away on specially equipped sawdust carts, on all three shifts, and taken to the dump, and there they are ... burned. The construction of a combine which processes wastes from mills in the Yenisey zone is put off from one five-year plan to another.

Ust-Ilimsk. Here they have learned a lesson from Bratsk, and the raw material base is in the charge of the timber industry complex itself. But here too the time has slipped by. The self-procurement organizations from the unforested southern regions of the country have taken the last tempting morsels of taiga out from under the noses of the workers of the Ilimsk complex. It is necessary to go for timber to other places, where it is time to build another complex of the same kind.

An even more paradoxical situation has arisen on the BAM. Transport construction workers built the road to the east so quickly that the Ministry of the Timber, Pulp and Paper, and Wood Processing Industry fell considerably behind in its work for assimilation of new areas. So-called self-procurement workers, about whom more will have to be said later, rushed along the route and began to construct their own small amateur enterprises, and of the four large enterprises planned for the Ministry of the Timber, Pulp and Paper, and Wood Processing Industry with an overall volume of almost 4 million cubic meters, only one has been constructed, and its volume is only a half million cubic meters. The strips of taiga along the new route remain idle and unused.

One of the reasons for this unlikely situation is the attachment of the timber industry enterprises to the old land. A good deal of money would be needed in order to move over to the new, optimal felling areas, and it would be necessary to place the plan in jeopardy and reduce procurements for a certain amount of time. The economic policy regarding the timber industry enterprises today still does not encourage them to look for better places. They have made their bed here, as they say: the road from the timber industry enterprise to the taiga felling area is becoming longer and longer, sometimes from the "upper" to the "lower" warehouses there are hundreds of kilometers of usually poor roads, the technical equipment is damaged, and labor expenditures increase.

And common sense demands a change. But it is difficult to make the timber industry enterprises move with orders alone. Material and economic levers are needed. In the final analysis we are speaking about paying more attention to that aspect of their activity which does not promise immediate success. But this long-range work promises an enviable surge of progress tomorrow and permanent success in the future: technical re-equipment, the construction of roads, and comprehensive processing of timber, without which approximately one-third of the felled trees will go to waste as before.

Today the timber procurement industry has 36,000 tractors and a large quantity of other technical equipment. It has been calculated that if in the first quarter of this year each tractor worked only one shift more, the additional volume of shipment of timber would amount to about a million cubic meters in the ministry as a whole. Hence the course toward comprehensively increasing the return from technical equipment and the elimination of "bottlenecks," for instance, with spare parts, where a shortage of inexpensive parts, for example, packing stuffing boxes for hydraulic cylinders or high pressure sleeves cause delays of three or four days.

Under the conditions of Irkutsk Oblast alone, this problem is being solved locally in the following way. Recently two of our automotive enterprises had house warmings at the same time: in Usolye-Sibirskiy and Bratsk. This means that the technical equipment will spend less time being repaired. But the lack of roads destroys many vehicles. In April it takes three bulldozers to pull out one logging truck. The reliable KrAZ's are written off in 5 years although they could run much longer.

The self-procurement workers who have already been mentioned are the subject for a special discussion. The taiga resources are national wealth just as, say, Tyumen petroleum is. It would be strange if every automotive base that needed fuel were to dig its own well on Tyumen land. The extraction of petroleum is handled by one well equipped organization. But in the timber area independent activity has become customary. On the Angara alone timber is procured by 44 ministries and departments. One-fourth of the timber is felled by independent procurement workers. Such a significant quantity of independent procurement organizations leads to a situation where each intends to use the timber raw material base for purely departmental needs, skimps on expenditures, and operates according to simplified technology, removing the "cream," hiring people from outside and jacking up the production cost of the products that are procured.

In our opinion, the problem of independent timber procurements can be solved in the following way. Before the end of the five-year plan, establish mandatory volumes of deliveries of industrial chips (wastes) for nearby timber industry complexes. For the next five-year plan, forbid them to ship round timber and force them to organize shops for wood processing. And, finally, it is time to suggest that the timber procurement organizations merge into comprehensive enterprises. Then there will be less squandering of state funds.

And there is another thing that bothers us. We must admit that we lumberjacks are sometimes grieved to see how unintelligently they handle our raw material. We are speaking about comprehensive processing of timber. Despite the appearance of large timber industry complexes, we still can speak precisely of comprehensive processing of timber. The variant of the Bratsk complex was never completed, and the same can be said about Ust-Ilim where another giant was constructed. But a giant is still not a complex, which was correctly discussed in SOTSIALISTICHESKAYA INDUSTRIYA by the deputy general director of the Ust-Ilim LPK, B. Binkin. We must think about how to return builders to their old sites so that they can finish what they have started. For at the Ust-Ilim site alone, by an order of the USSR minister of power and

electrification, P. Neporozhniy, more than a thousand construction workers were transferred and millions of rubles' worth of work remained uncompleted. It was a complex that was planned, but the construction workers, having reported that they had completed the construction of the main facilities, moved to other sites. But it is the secondary, auxiliary facilities that are capable of processing the products comprehensively, from the top to the roots, making use of bark and sawdust, stumps and twigs. There is no doubt that we must take on the new complexes more aggressively. But first it is necessary to complete the old ones. As a rule, this must be raised to the rank of law, and a facility should not be accepted until it is absolutely complete.

The most difficult stage in the life of timber procurement workers has passed. Having taken advantage of the Siberian winter, which covered the roads with a hard surface, we have transported a considerable quantity of timber from the "upper" warehouses. This made it possible to assume a quick tempo from the very beginning of the year. Timber procurements will continue to increase. And we must make sure that all of this immense wealth of timber goes for the good of the people.

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## FORESTRY AND TIMBER

### BELORUSSIAN ROUND TABLE DISCUSSION ON TIMBER UTILIZATION

Minsk PROMYSHLENNOST' BELORUSSII in Russian No 6, Jun 84 pp 36-41

/Article: "Who Is the Master of the Forest?"

/Text Furniture and stadium platforms, handles for garden shovels, support posts for mine faces, books and pencils -- all made from wood. A tremendous amount is required for the national economy. Distinct from metal and petroleum, wood is a renewable resource. But this is not meant to imply that it can be exploited in a thoughtless manner or used as one wishes.

At the end of last year, during a session of the Politburo of the CPSU Central Committee, mention was made of the fact that timber is an important component part of the national resources and that it must be used in the interests of the national economy. How can the efficient use of wood be ensured and how can wood losses be prevented? Such were the questions which were discussed during a "round table" meeting of the Editorial Board. The following individuals participated in this discussion: L.V. Avdeyev -- chief engineer for the Minskdiv Production Association, L.D. Yesimchik, senior scientific worker at the Belorussian Scientific-Research Institute of Forestry, V.B. Zholtikov -- chief of the Technical Administration for the Ministry of the Timber and Wood Processing Industry of the BSSR, G.I. Zdorovtsev -- chief of the Department of Timber, Paper and Wood Processing Industry of Gosplan BSSR, V.N. Kislyakov -- chief of the Department of Forest Tending and Forest Utilization of the BSSR Ministry of Forestry, M.Ye. Mayorov -- junior scientific worker at the Scientific-Research Economic Institute of Gosplan BSSR and Candidate of Agricultural Sciences, N.A. Nikolayev -- chief technologist in the Administration for the Production of Consumer Goods and By-Product Procurements in the forests of the BSSR Ministry of Forestry, V.I. Chulitskiy -- chief of the Administration for Transport and Timber Supply of the BSSR Ministry of the Timber and Wood Processing Industry, V.F. Shamal' -- chief of the Administration of Timber Procurements and Forest Chemistry for this same ministry, V.G. Shiyenok -- director of the Borisovka Experimental Forestry Farm, A.D. Yanushko -- pro-rector for scientific work at the Belorussian Technological Institute

imeni S.M. Kirov and Candidate of Agricultural Sciences, A.A. Yarkovich -- chief of the Bellesbumsnabsbyt Administration of Gossnab BSSR. The "round table" session was conducted and a report prepared for it by the editor of the Department of Economics for the journal F. Velikoselets.

Velikoselets. It would only be logical to commence our discussion with quantitative and qualitative evaluations of the republic's forestry resources and an analysis of the trends concerned with their utilization.

Kislyakov. At the present time, 80.7 percent of the republic's forestry tracts are under the jurisdiction of the BSSR Ministry of Forestry. It is these forests which serve as the principal base for the wood processing workers and other branches of the national economy, all of which consume wood. If we are discussing the republic's forests in general, then the areas which they occupy have stabilized during the past decade and amount to 8.2 million hectares. A peculiarity of our forestry fund is the scarcity of mature strains. The war and post-war construction played a large role in this regard. According to the latest accounting, for example, mature forests constitute only 2.8 percent. Over the past 5 years, the increase has amounted to 0.2 percent. However, it bears mentioning that many forestry tracts are performing water-preservation, protective and sanitary functions. Naturally, in such areas the use of the forests is either forbidden or limited. In forests which are being exploited, the supplies of wood suitable for use amount to 30.7 million cubic meters. The trend is for these supplies to increase. Improvements are taking place in the structure of the forests, with the wood supplies per hectare increasing. However, we are unable to utilize this increase because it is taking place in the form of barely mature forests.

In view of the age structure of our forests, I wish to state that no considerable increase is expected to take place in the tree-felling areas prior to the end of this current century. In other words, there is no reason to expect that the wood requirements of the national economy will be satisfied by a substantial increase in the wood procurements.

The republic's principal timber procurement agencies -- the BSSR Ministry of the Timber and Wood Processing Industry, the enterprises of which are procuring 4.8 million cubic meters of wood and the BSSR Ministry of Forestry, which procures 1.4 million cubic meters for general use and approximately 4 million cubic meters of wood from forest improvement cuttings. In this regard, it bears mentioning that whereas BSSR Minleskhov /Ministry of the Forestry Industry/ annually handles the tree-cutting area assigned to it, the BSSR Minlesprom /Ministry of the Timber Industry/ supplies approximately 400,000-500,000 less cubic meters of wood than called for. And this occurs under conditions involving a wood deficit.

What are the reasons for this? In my opinion it is caused mainly by an absence of capabilities for procuring wood at certain forestry farms, a shortage of manpower and also a lack of roads. As a rule, the fund with low technical qualities is not being mastered. That is, the best tracts are being cut down and the worst are left standing.

Velikoselets. Is it possible that no responsibility has been assigned for such management?

Kislyakov. In conformity with the existing rules for the release of standing timber in the forests of the USSR, a fine is exacted in the amount of 10 percent of the tax value of the under-developed fund. As a rule, the sums are not very great. Thus in many instances the enterprises prefer a payment rather than development.

Shamal'. The geography of our production capabilities does not always conform to the geography of the tree-felling fund. Actually, the average amount of tree-felling work is 1,000 cubic meters (for 12 days of work). Thereafter a move takes place. It is difficult to develop a production base under such conditions. Certainly, we are taking the necessary measures. First of all, we are redistributing the limits for forest utilization among the procurement agencies and we are increasing the timber procurement volumes through the development of a hitherto unused fund. Thus, compared to 2 years ago when approximately 500,000 cubic meters of the tree-felling fund were not mastered, last year -- only 237,000 cubic meters. This constitutes 4.8 percent of the overall fund. I consider such a situation to be normal. Indeed, the last pine tree should not be cut down on the 31st of December. There must be some type of inter-operation stockpile. Moreover, I wish to note that we are entitled to a delay (6 months) in the mastering of a tree-felling area.

Mayorov. I would like to add that there is still one other criterion for an economic approach for the utilization of forest resources. It is the indicator for the volume of ahead-of-schedule fellings.

Shamal'. In 1981 we cut down 429,000 cubic meters of wood ahead of schedule and last year -- only 247,000 cubic meters and this indicates an improvement in the work. At the same time, I wish to note that the complete development of the tree-felling fund is dependent upon Minleskhoz for the BSSR. What do I have in mind? With regard to the republic's overall tree-felling fund, our proportion is 78 percent. It would be only logical for these percentages to be available in each oblast. But this is not the case. In Grodno Oblast, for example, we were allocated only 50 percent and in Gomel Oblast, where the forest and the procurement conditions are considerably worse -- 84 percent.

Kislyakov. I foresaw this reproach. The resources procured by us are used mainly for satisfying the needs of the rural areas -- for the repair and construction of housing, schools and hospitals and various buildings at kolkhozes, sovkhoses and other organizations, which do not have such opportunities available for transporting the wood procured (it is their responsibility and not ours) as do have the enterprises of the timber and wood processing industry. And still a second point. Coniferous wood is required first of all for the mentioned needs. For all practical purposes, deciduous wood is unsuited for this purpose. Thus, use must be made of the sampling method. It bears mentioning that deciduous wood should ideally be used in industry. Plywood board, matchsticks and other products can be obtained from it.

Yesimchik. The problem of making efficient use of the forest raw material resources in our republic is a very urgent one. Indeed, the national economic requirements for wood are increasing with each passing year and its production is conditioned by the status of our forests. Consequently, we are experiencing difficulty in satisfying these requirements. And this, as already mentioned,

is taking place even with improvements being realized in the condition of the forestry fund. At the present time, the overall area of the forestry fund of the BSSR is 8.2 million hectares. In the opinion of the specialists, this is quite adequate for satisfying completely the republic's requirements for wood. During the next few years, the internal structure of the forestry fund will undergo definite changes. It is expected that by the year 2000 forests of the 1st group will occupy 43 percent of the overall area. An increase will take place in the number of coniferous and hard-wood deciduous strains. Whereas at the present time soft deciduous strains constitute roughly 27 percent, by the year 2000 their proportion will decrease to 20 percent. A change will also take place in the age structure of the forests. After 15-20 years, the average area of mature plantings in the republic must amount to 9-10 percent. This will be close to the optimum figure. The overall supplies of wood per unit of area will increase. Beyond any doubt, all of these changes in the forestry fund will exert a definite influence on the future estimated felling area and on the extent of use.

If we are discussing the quality of the forest raw materials, then it should be noted that small scale wood will be procured for the most part in the immediate future -- from improvement cuttings and sanitary procurements. On the whole however, it is believed that by 1995 the potential will be available for satisfying completely the republic's requirements for wood by means of its own forest resources. Certainly, a number of measures will have to be undertaken in order to accomplish this. It will be necessary first of all to accelerate the transfer of the forests remaining at the kolkhozes and sovkhoses over to Minleskhoz for the BSSR and to ensure their proper organization. Secondly, the timber procurement organizations must be supplied with productive equipment. Thirdly, a requirement will exist for developing more rapidly the capabilities required for processing the waste products of production and small-scale wood. Fourthly, improvement must be carried out in a more energetic manner in the organization of labor and, in particular, the brigade contract must be introduced into operations more actively, especially in forestry. And finally, thought must be given to strengthening the permanent raw material base for each association and enterprise that consumes wood.

Zdorovtsev. At the present time, the principal trends for further development of the branch are taking shape in connection with the consumption only of internal raw material resources. The importing of wood in point of fact is being eliminated. Actually, during the next 15 years the tree-felling area will not increase but rather it will remain the same. This amounts to 6.7 million cubic meters. Improvement cuttings will furnish 4-4.3 million cubic meters. It is precisely these resources which must be taken into account. Thus better use must be made of them than is the case today. For example, the lumber yield in the timber industry at the present time is 92 percent of the overall volume of procurements and in forestry -- only 71-72 percent. This necessarily has to arouse certain thoughts. First of all the forestry fund for chief utilization must be transferred over to the same party. But here there is one "but." A portion of the wood procured as improvement cuttings is not centralized and is used for internal needs. In this manner we obtain approximately 40 percent of the lumber used in the republic. The lumber is used for city and village construction, for the repair and operation of fixed capital, apartments, communications and electric power transmission lines and



for many other needs. There are norms for this work. In accordance with these norms, we were undersupplied by 833,000 cubic meters of wood. Understandably, in such situations it is dangerous to centralize all resources according to the chief use. Indeed, this signifies that the republic is losing a portion of them. For example, having obtained additional cutting areas, USSR Minlesdrev wishes to realize some advantage from them. Otherwise, why would it accept them? That is, that which earlier was used for satisfying the needs of the republic could be shipped beyond its borders. In such a situation, it would be necessary to find other means. In particular, concern must be displayed for ensuring that the available raw material resources, that is the tree-felling fund for chief use and for improvement cuttings, should be worked in a most efficient and purposeful manner. In this regard, I wish to state that our forest industry is not fulfilling its assortment plan from year to year and thus the plans for the production of goods by the wood processing enterprises are threatened.

Shamal'. Unfortunately, deviations from the approved assortment plan are in fact taking place. But they are not so great. Of the many products listed in the plan, we suffered shortages last year only in construction lumber, match-stick materials (although the production of matches was ensured) and some items of secondary importance. For the most part, the assortment plan was subordinated to the production programs of the enterprises. Still another problem is the fact that the deliveries are often disrupted owing to fault on the part of the transport workers.

Velikoselets. It is known that BSSR Minleskhoz is procuring wood in greater volumes than is Minlesdrev, despite the fact that it is not equipped as well from a technical standpoint. How did this situation develop and can it be corrected.

Zdorovtsev. The BSSR Ministry of the Forestry Industry is being supplied with machines and mechanisms based upon a work program of a purely forestry husbandry nature (518,000 cubic meters). Resources are being allocated in behalf of this volume. With regard to the felling of timber from the fund of the republic's Council of Ministers and the shipping of the wood, this falls within the competence of the executive committees of oblast soviets of people's deputies and kolkhoz and sovkhoz councils. Nobody is allocating any materials for this work and indeed it is not even listed in the national economic plan.

Kislyakov. That is, the BSSR Minleskhoz is given a wood procurement volume which it is obligated to fulfill. With regard to acquiring the equipment needed, this is its own affair.

Zdorovtsev. It is agreed that in addition to asking questions, assistance must also be furnished. On the other hand, a requirement also exists for acting in a more enterprising manner. For example, cutting machines for which there was a great need were created at the Belorussian Technological Institute. With the aid of Gosplan BSSR, three units were produced at an enterprise in Minsk. Only three. But one was taken and shipped outside the republic. And exactly what is a joist-cutting machine? It is a machine which makes joists out of small-scale wood, joists which subsequently can be used for making a variety of products.



Kislyakov. Who is to be blamed for the fact that these machines are not available at the forestry farms and lumber industry farms?

Zdorovtsev. At one time, your ministry categorically refused to accept them: it maintained that these machines were not required for forestry work.

Kislyakov. But where can they be obtained today?

Zholtikov. We are making them ourselves.

Zdorovtsev. The institute requires requisitions. It will not concern itself with these machines unless such requisitions are available.

Kislyakov. A government decree has ordered us to introduce these machines prior to 1985. I do not believe that the ministry has ordered them.

Yanushko. Last year the Brest Oblast Forestry Administration ordered two joist-cutting machines. In doing so, it by-passed the ministry.

Nikolayev. But it should be stated first of all that this machine is considered to be inadequate and, secondly, it costs a tremendous amount of money.

Zholtikov. What do you have in mind when you say a tremendous amount of money?

Nikolayev. Somewhere in the neighborhood of 15,000 rubles.

Zholtikov. This tremendous amount of money will be repaid within one year.

Nikolayev. The equipment which we are receiving on a planned basis does not always justify its existence. It is still rather early to order the machines for all of the forestry farms at once or to assume that they will be the most effective means.

Avdeyev. At one time the Pleshchenitsy Lumber Industry Farm acquired a joist machine. All in all, its design was fairly good. True, a number of difficulties were associated with it. However, today the timber industry farm is satisfied with it. No problems arose with regard to small-scale wood at a lower warehouse. After improving certain elements, the machine could be produced serially. At the same time, a solution had to be found for the cutting instrument problem. Difficulties are still being encountered in attempting to acquire it.

Velikoselets. And what have the workers had to say regarding this machine?

Yanushko. It is my opinion that the machine has been worked out sufficiently. It is presently being used in Georgia and Moldavia. Only weak use is being made of it in Belorussia owing to the fact that it is being produced using primitive methods. If we examine the scientific-technical problem on a more extensive scale, then it bears mentioning that we have created items of equipment which are making it possible to mechanize forest restoration work completely. Equipment is available for the shipping, loading and dressing of wood at lower warehouses and so forth. Thus it cannot be said that equipment is not available today. However, it must be stated that shortages do exist.

Unfortunately, it is still not being used in the best possible manner. Let us continue further. If we take the science of forestry, then we are dealing mainly with those areas associated with the study of forest cultivation. Far fewer studies are being carried out in the area of production technology. However, at the present time I believe that we have everything required for successfully solving the established tasks. I repeat: today the question is not so much concerned with the creation of machines and equipment as it is with the number of machines and items of equipment available. For example let us take the Ministry of the Timber and Wood Processing Industry. It has its own plant at Borisov. These same joist machines are made here. The Ministry of the Forestry Industry, which advocates mechanization in particular, does not even have workshops for the production of even the simplest of mechanisms. Thus we are not speaking here of each department having its own plant. Rather we have in mind the fact that we can solve many problems ourselves.

Yakovich. A shortage of equipment at the forestry farms leads to a situation wherein the wood that is procured, for example from improvement cuttings, cannot be taken at times. At the same time, we are importing such wood over great distances.

Velikoselets. Based upon the opinions expressed here, it would appear that poor roads constitute one of the reasons why poor use is being made of the forest resources here.

Kislyakov. Nor is this surprising. Minlesprom for the BSSR, for example, generally does not participate in any road construction work.

Zdorovtsev. It participates but not to a sufficient degree.

Shamal'. In 1977 we spent 566,000 rubles for road construction and built 281 kilometers of road surface. Last year, more than 2.6 million rubles were used for this purpose, with 547 kilometers of road surface being built, including 42 kilometers of year-round roads.

At the present time, 51 kopecks per cubic meter are being spent for road construction. This is somewhat less than the figures for leading farms in the Baltic and Ukraine. But on the other hand, a problem exists in connection with using this money. Indeed, we do not have our own construction organization. We are experiencing many difficulties with materials. In my opinion, the best variant would be to have road construction carried out by Minleskhoz for the BSSR. Indeed the land and the forests belong to it and thus it has a better knowledge of the routes to be laid out for the roads, taking into account the tending of the plantings and the procurements. We would willingly participate in such construction on a share basis.

Chulitskiy. There have been cases of roads having been built and thereafter the procurements of wood terminated.

Kislyakov. The existing rules call for the establishment of timber raw material bases of extended use for the timber procurement enterprises. Since the raw material supplies in Belorussia have been exhausted (average tree-felling area is 3.5 hectares), it is not considered advisable to establish such bases.

Zholtikov. And is it advisable to build roads under such conditions?

Kislyakov. Minleskhoz for the BSSR, jointly with Minlesdrev for the BSSR, developed recommendations for concentration of the tree-felling fund, with road construction being taken into account. During the course of preparing plans for the development of forestry organizations, plans are also composed for concentration of the tree-felling fund and road construction.

Zdorovtsev. There are also plans for the construction of year-round roads. This involves both the BSSR Ministry of Forestry and BSSR Minlesprom. It should also be mentioned that in some oblasts, where the structure of the forestry farms includes land reclamation stations, road construction is entrusted to these stations. Their resources have been employed for building a number of fine roads. But this is a minor consideration. We must proceed farther and plan the construction of roads such that emphasis is placed upon building the principal roads during the 12th Five-Year Plan. In this regard, I would like to add that Giproleskhoz has already carried out the necessary studies and has indicated specifically where these roads should be built. One question still remains outstanding: who will carry out the construction?

One fact remains quite clear: the search for internal resources must be activated. Commencing with the next five-year plan, we will plan the construction of roads for definite organizations. For example, for mezhkolkhozstroy /interkolkhoz construction organization/ and for these same land reclamation stations. And certainly we will request that the necessary equipment be made available for this purpose in the planned manner.

Velikoselets. Nevertheless, who is responsible today for road construction?

Kislyakov. Tasks have been assigned to both ministries in this regard. Over a period of 3 years, the BSSR Ministry of Forestry built 240 kilometers of roads using both their own resources and also on the basis of agreements reached with other organizations. These roads can be used for travel, for hauling timber and so forth. With regard to BSSR Minlesprom, the money made available there was used only for creating ramps for general use roads. It is believed that this reveals a lack of organization.

Shiyenok. Last year we built a hard surface road 4.8 kilometers in length. Today this road is being used by the forest industry, agriculture and by forestry workers. This year we are building two roads -- six kilometers and two kilometers. Thus, 12.8 kilometers of hard surface road will be built over a period of 2 years. Fine roads with a wide thoroughfare of 8 meters. These are general purpose roads.

Kislyakov. And how many roads are being built by the Borisovdrev Association?

Shiyenok. I am not acquainted with the financial potential of this association, but as a rule it builds roads for the hauling of timber and here its interest seems to end.

Zholtikov. Do not forget that in addition to wishing to build roads, the ability for doing so must also be present.

Shiyenok. The construction is carried out by a specialized organization rather than by ourselves. This organization has both the personnel and the equipment. Many leskhozoes /forestry farms/ are following this path.

Yarkovich. In solving the problem of road construction, Minlesdrev for the BSSR is influenced by the fact that more often than not the tree-felling areas are not very large -- 2,000 cubic meters. Thus its enterprises are building roads over which only MAZ /automobiles made by the Minsk Automobile Plant can pass. That is, they are expending time and resources only for the sake of hauling one and a half thousand cubic meters.

Zdorovtsev. In other words, they are living for today.

Zholtikov. And what about in the future? You procure 2,000 cubic meters and then what happens later?

Kislyakov. Later these roads will be operated by local kolkhozoes, sovkhözoes, leskhozoes and by the same timber industry farms.

Zholtikov. Is it your opinion that capital roads should be built?

Zdorovtsev. Yes, capital roads.

Velikoselets. The roads are certainly an important factor with regard to the efficient use of local forest raw material resources. But there are also others.

Zdorovtsev. For example, labor organization.

Kislyakov. It would only be logical to place the capabilities in the vicinity of the raw material resources. Unfortunately, this logic is not being followed in all areas. In particular, the production base in Vitabsk Oblast is being developed very slowly. Each year, approximately 25,000 cubic meters of the tree-felling fund are being developed at the Goretskiy Forestry Farm. The reason? The absence of a suitable base.

Nikolayev. In discussing the efficient use of forest resources, I would like to direct attention to the fact that we are utilizing not only the wood itself but also the crown foliage of trees, particularly coniferous needles for the production of vitamin meal. Sixty eight forestry farms are producing such meal. During the 1981-1983 period alone, they procured 137,000 tons of coniferous meal, or 2,000 tons more than the planned task. The production of this product will increase. In addition to producing coniferous meal from green verdure, one of our enterprises is also engaged in producing chlorophyll-carotene paste. It produced 59,000 tons during 3 years of the this five-year plan. Last year, following a certain amount of modernization of the department, the production of conifer-medical extract was begun. Construction work will commence this year on a similar department at the Brest Forestry Farm. The plans also call for an expansion in the assortment of products being produced as a result of more complete utilization of the available raw materials.

Velikoselets. Is all of the verdure being processed, or more exactly -- utilized? Or is some of it being lost?



Nikolayev. Unfortunately, large amounts are being lost. Indeed, enterprises of the BSSR Minlesprom must carry out the procurement, harvesting and delivery to the forestry farms of the verdure of wood and shrubbery strains obtained at tree-fellings and lower storehouses. Naturally, with the forestry farms being reimbursed for their expenditures. However, the timber industry farms are not carrying through on this work.

Shamal' The task of procuring verdure constitutes only the beginning of the work involved. For the purpose of implementing it, maximum concern is attached to having additional manpower available. In addition, If we undertake this ourselves then our labor productivity will fall. Thus great importance is attached to knowing in advance exactly when and where the verdure will be procured. Only upon this condition will we be able to include these procurements in the felling plans. And it sometimes happens that it is even senseless to discuss the procurement of verdure following the skidding of trees. The trees are dirty and spoiled and not type of processing is suitable.

Nikolayev. I would like to touch upon this aspect. We are delivering chips to the BSSR Minlesprom. In view of this fact, we addressed a request to them -- to supply felling machines. However, Minlesprom did not meet us halfway.

Zholtikov. We will pay you for this work. What else do you need? If we sell lumber of panels, then we do not seek assistance from our consumers. We are your consumer.

Mayorov. With regard to the interrelationships, a change must take place in the psychology. I believe that it is wrong for the BSSR Minlesprom to feel that it is under no obligation to BSSR Minleskhov. A payment for the raw materials -- this still is not everything.

Zdorovtsev. It bears mentioning that the leskhov's are not supplying chips in conformity with the national economic plan, but rather based upon the need for improving the use of raw material resources.

Zholtikov. There is still Gosplan and Gossnab. They should provide assistance.

Yarkovich. When a miscalculation takes place in your production volume, then Minlesprom USSR miscalculates in the case of the material resources. But indeed you do not make the chips yourselves, but rather receive them as a gift.

Zdorovtsev. When we are discussing an improvement in the efficiency of use of raw material resources, through the use of the internal resources of ministries and departments, then Nikolayev must necessarily be supported. Minlesprom for the BSSR has dozens of highly productive felling machines which are lying idle for all practical purposes. Thus, why are they not transferred over to Minleskhov? Let them be used there. But even in the face of a shortage of equipment at Minleskhov, a great deal has been accomplished in connection with the production of technological chips. Yet Minlesprom is not fulfilling its task. This year its enterprises have made almost no use of their tree-felling waste products.

Avdeyev. We are striving to utilize our waste products in production, although this is somewhat unprofitable for us. But once again we need equipment and mobile felling machines. At the same time, I would like to direct attention to those waste products which are being formed in the departments of enterprises.



frameworks for pits and other products. Soft materials were shipped in the form of hydrolyzed raw materials and so forth. Thus, 84,500 cubic meters were processed. And whereas our coefficient for the all-round use of wood was 0.87, that for waste products was 0.88. This year the situation may deteriorate for the simple reason that the allocation of freight cars to us has been cut in half and the four chip carriers assigned to us does not compensate for this loss.

Yarkovich. There is still another problem with the waste products. Earlier we lacked the raw materials for hydrolysis plants. We imported them from the Karelian ASSR. This was sawdust for the most part, sawdust which was not being used anywhere. But the plants carried out modernization work and rejected the use of this type of raw material. A surplus of sawdust developed. At the present time, for example, it amounts to approximately 80,000 tons. I believe that the solution lies in coordinating the actions of all those involved in the timber industry complex. For example, let us take the cellulose plant which was recently placed in operation in the republic. This year we must supply it with a definite amount of raw material -- spruce. Next year the second phase of this plant will enter operations. The raw material requirement will double. Thus if use is not made of the wood being obtained by the forestry farms from improvement cuttings, we will not be able to supply it with raw materials. True, 3-5 cubic meters of this raw material lies in inaccessible places. And nobody knows how to obtain it.

Or consider still another aspect. At Minleskhoz, 1st grade raw materials are at times used for producing whatever products they can and at Minlesprom -- they do this using 4th grade raw materials. It sometimes happens that coniferous strains are used for producing planks. Is this really wise?

Kislyakov. True, we are procuring wood in small batches (several cubic meters) from improvement cuttings. But how could it be otherwise if no technical equipment is available for gathering in this wood?

Velikoselets. What is the fate of this wood at the present time?

Kislyakov. It is being distributed to satisfy the needs of rural construction and it is being obtained independently. We are skidding approximately one half of it and delivering it to the roads. The second half is being obtained by the consumer directly from the stumps.

Yarkovich. Does a portion remain in the forest?

Kislyakov. On 1 January of this year, the wood remaining in the forest amounted to 400,000 kilometers. This is 10 percent of the annual procurement volume. That is, roughly one month's norm.

Yanushko. We must grow the wood we need and thus make it possible to fulfill the assortment plan. Mention should be made here of the cellulose plant. It requires mainly coniferous wood. When it is realized that the work here involves mainly small-scale wood, then there is obviously no need for growing trees up to 100 years of age in the plant's raw material zone. Trees can be cut down here at the age of 50-60 years. In short, we must prepare raw material

problems concerned with road construction, the processing of the wood and all of the remaining problems.

At times one hears the opinion being expressed that with the merging of branches we are able to solve all of the problems. This is not entirely so. Today we are procuring only so much wood as our forests allow. In short, no type of merging of branches will increase our resource supply. At the same time, better use must be made of the resources available. Thus we must further improve cooperation among the branches. It is believed that in order to form a definite strategy for the republic's forestry complex, a special council must be organized in which all of the branches are represented. During the course of working out the plans, such a council could balance the efforts of the interested parties. This is especially important with regard to work being carried out on five-year plans.

From the Editorial Board. The problem of making efficient use of forestry raw material resources is many-sided in nature. Those who participated in the "round table" session concentrated their efforts chiefly on two aspects -- technical and organizational-economic. An interesting discussion took place. Its main thrust -- a strategy must be developed for the republic's timber industry complex. One can only agree with this recommendation.

At the same time, the Editorial Board invites the readers to continue this discussion of the problems concerned with the efficient use of the raw materials of the forest.

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